



# STIC Search Report

EIC 3700

STIC Database Tracking Number: 200216

**TO:** James Swiger, III  
**Location:** RND 6c04  
**Art Unit:** 3733  
**Tuesday, September 05, 2006**  
  
**Case Serial Number:** 10/671348

**From:** Ethel Leslie  
**Location:** EIC 3700  
**RND 8A34**  
**Phone:** 571-272-5992  
  
**Ethel.leslie@uspto.gov**

## Search Notes

Jim,

Attached is the completed search for the method of injecting bone cement. I did an extensive search on the requested topic in a number of bibliographic and full-text databases as well as on the Internet. I found several items that I think might help you – they are marked with yellow flags. Please be sure to look over all the results as there may be other items of interest. I have attached the search strategies used for the searches performed.

I hope you find this search helpful. If you have a moment, please fill out the attached STIC Feedback Form. And, if there is anything I can do to refine or revise this search, please let me know.

Sincerely,  
Ethel Leslie

A handwritten signature in black ink, appearing to read "Ethel".



# STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact **the EIC searcher or contact:**

**John Sims, EIC 3700 Team Leader**  
RND 8B35, Phone 2-3507

## Voluntary Results Feedback Form

- *I am an examiner in Workgroup:*  *Example: 3730*
- *Relevant prior art found, search results used as follows:*
- 102 rejection
  - 103 rejection
  - Cited as being of interest.
  - Helped examiner better understand the invention.
  - Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- Foreign Patent(s)
- Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Results were not useful in determining patentability or understanding the invention.

**Comments:**

Drop off or send completed forms to STIC/EIC3700 RND 8B31



\* I'd like to  
count this by  
Tuesday @ Noon  
for this Bi-week -  
- It is a "2"  
- Thanks!

Access DB# 200216

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: James Swiger Examiner #: 81582 Date: 8/30/2006  
Art Unit: 3733 Phone Number 302-5557 Serial Number: 10671,348  
Mail Box and Bldg/Room Location: \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for forming a hardened cement in a lone cavity

Inventors (please provide full names): Jiin-Huey Chern Lin  
Chien-Ping Ju

Earliest Priority Filing Date: 3/21/2003

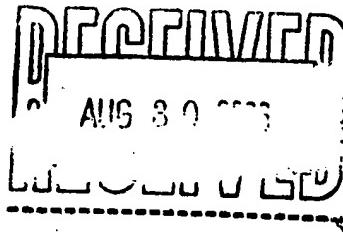
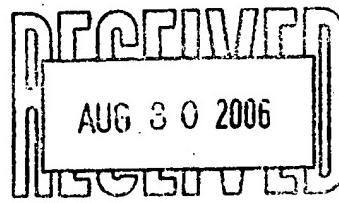
\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

clm #1 as amended 6/21/06

injecting cement paste  
into a pocket.

Allowing cement to harden  
as a "mold" "mould"

the removing the pocket / "mould"



EDUARDO C. ROBERT  
SUPERVISORY PATENT EXAMINER

*Please Rush!*

Set	Items	Description
S1	107254	BONE OR BONES OR BONEY OR BONED OR OSSEOUS? OR OSTEAL? OR - SKELETON? OR SKELETAL? OR (INTRAMEDUL? OR INTERMEDUL? OR HARD OR BONY OR BONEY OR HUMERUS OR HUMERAL OR FEMUR OR FEMORAL) (- 3N) (TISSUE OR TISSUES)
S2	296331	CEMENT? OR PASTE OR PASTES OR CPC OR HARDEN? (3N) (MATERIAL? OR SUBSTANCE?)
S3	2647364	INJECT? OR ADMINIST? OR DELIVER? OR INTRODUC? OR DISPENS? - OR DISCHARG?
S4	2440947	REMOV? OR (TAKE OR TOOK OR CUT OR CUTS OR PULL? ? OR PULLED OR PULLING) () OUT OR EXTRACT?
S5	2624529	SEPARAT? OR DETACH? OR RELEAS?
S6	385779	POCKET? OR POUCH? OR BALLOON? OR SAC OR SACS OR SACK OR SA- CKS OR BAG OR BAGS OR BAGLIKE OR ENCLOSURE?
S7	447605	INFLAT? OR EXPAND?
S8	777680	MESH??? OR PORE? ? OR POROUS? OR FABRIC OR CLOTH
S9	493143	IC=(A61F? OR A61M? OR A61D? OR A61B?)
S10	10901	S2(5N)S3
S11	47504	S4:S5(5N)S6:S7
S12	19339	S6:S7(5N)S8
S13	0	S1 AND S10 AND S11 AND S12
S14	7	S1 AND S10 AND S11
S15	1	S1 AND S2 AND S11 AND S12
S16	34	S1 AND S2 AND S11
S17	16	(S16 NOT S14:S15) AND S9
S18	2	S10 AND S11 AND S12
S19	2	S18 NOT (S14:S15 OR S17)
S20	23288	(SLEEVE? OR SHEATH?) (5N) S4:S5
S21	5484	(SLEEVE? OR SHEATH?) (5N) S8
S22	3	S1 AND S10 AND S20
S23	2	S22 NOT (S14:S15 OR S17)
S24	23	S1 AND S2 AND S20:S21
S25	15	(S24 NOT (S14:S15 OR S17 OR S23)) AND S9
? show files		
File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)		
(c) 2006 JPO & JAPIO		
File 350:Derwent WPIX 1963-2006/UD=200656		
(c) 2006 The Thomson Corporation		
?		

14/5/1 (Item 1 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0014476385 - Drawing available  
WPI ACC NO: 2004-668031/200465  
Related WPI Acc No: 2004-668030  
XRXPX Acc No: N2004-529183

**Harden cement forming method for bone cavity, involves applying pressure to cement paste before paste is hardened, and causing portion of liquid to squeeze out of pocket to increase powder/liquid ratio of paste**

Patent Assignee: CANA LAB CORP (CANA-N); JU C (JUCC-I); LIN J C (LINJ-I)  
Inventor: CHERN LIN J; JU C; LIN J C

**Patent Family (2 patents, 106 countries)**

Patent	Application			
Number	Kind Date	Number	Kind Date	Update
US 20040186481	A1 20040923	US 2003393044	A 20030321	200465 B
		US 2003671348	A 20030929	
WO 2004093733	A2 20041104	WO 2004US6086	A 20040322	200472 E

Priority Applications (no., kind, date): US 2003393044 A 20030321; US 2003671348 A 20030929

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20040186481	A1	EN	7	2	C-I-P of application US 2003393044
WO 2004093733	A2	EN			

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

#### **Alerting Abstract US A1**

NOVELTY - The method involves preparing a cement paste from a powder and a liquid, and **injecting the paste** into a pocket (30) on a **bone** cavity. Pressure is applied to the paste before the paste is hardened. A portion of the paste is caused to squeeze out of the pocket, such that the powder/liquid ratio of the paste is increased. The paste in the pocket is allowed to harden and the **pocket** is opened and **separated** from the cement.

USE - Used for forming a hardened cement in a **bone** cavity (claimed).

ADVANTAGE - The method sets the cement paste within the closed pocket without directly contacting body fluid/blood and applies the pressure within the pocket to increase the strength of the cement, thus reducing the risk of cement dispersion/disintegration and avoiding the cement paste leaking. The method easily keeps the powder/liquid ratio of the cement paste accurate by monitoring the pressure build-up within the pocket.

DESCRIPTION OF DRAWINGS - DESCRIPTION OF DRAWING - The drawing shows a cross-sectional view of a device for forming hardened cement in a **bone** cavity.

- 10 Syringe
- 11 Cylindrical tube
- 12 Plug
- 30 Pocket
- 31 Neck

**Title Terms/Index Terms/Additional Words:** HARDEN; CEMENT; FORMING; METHOD;  
**BONE** ; CAVITY; APPLY; PRESSURE; PASTE; CAUSE; PORTION; LIQUID; SQUEEZE;  
POCKET; INCREASE; POWDER; RATIO

**Class Codes**

International Classification (Main): A61B-017/22, A61F  
US Classification, Issued: 606092000

File Segment: EngPI; ;  
DWPI Class: P31; P32

14/5/2 (Item 2 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0014476384 - Drawing available  
WPI ACC NO: 2004-668030/  
Related WPI Acc No: 2004-668031  
XRPX Acc No: N2004-529182

**Forming method of hardened cement e.g. calcium phosphate cement in bone cavity involves allowing to harden cement paste that is being injected into balloon**

Patent Assignee: CANA LAB CORP (CANA-N)

Inventor: JU C; LIN J C

**Patent Family** (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 20040186480	A1	20040923	US 2003393044	A	20030321	200465 B

Priority Applications (no., kind, date): US 2003393044 A 20030321

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20040186480	A1	EN	7	2	

**Alerting Abstract** US A1

NOVELTY - The method involves allowing to harden a **cement paste** that is being **injected** into a balloon.

USE - For forming hardened cement e.g. calcium phosphate cement (CPC) in **bone** cavity.

ADVANTAGE - Can easily keep an accurate powder-liquid ratio of the cement paste to improve hardening quality of cement in the **bone** cavity.

DESCRIPTION OF DRAWINGS - The figure is a cross-sectional view of a forming device of hardened cement in **bone** cavity.

12 Plug  
30 Pocket  
31 Neck  
40 Wire holder  
50 Thin wire

**Title Terms/Index Terms/Additional Words:** FORMING; METHOD; HARDEN; CEMENT; CALCIUM; PHOSPHATE; **BONE** ; CAVITY; ALLOW; PASTE; INJECTION; BALLOON

**Class Codes**

International Classification (Main): A61B-017/58  
US Classification, Issued: 606092000

File Segment: EngPI; ;  
DWPI Class: P31

14/5/3 (Item 3 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0013541189 - Drawing available  
WPI ACC NO: 2003-634860/200360  
Related WPI Acc No: 2004-247284  
XRAM Acc No: C2003-173415  
XRXPX Acc No: N2003-504896

**Grooved director apparatus useful in aiding in the insertion of balloon catheter into vertebra, has elongated rigid tubular stainless steel, inflatable balloon, anchor, and pump**

Patent Assignee: BERGER J L (BERG-I)

Inventor: BERGER J L

**Patent Family (2 patents, 1 countries)**

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 20030050702	A1	20030313	US 2001950581	A	20010913	200360 B
US 6706069	B2	20040316	US 2001950581	A	20010913	200420 E

Priority Applications (no., kind, date): US 2001950581 A 20010913

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030050702	A1	EN	10	4	

#### **Alerting Abstract US A1**

**NOVELTY** - A grooved director apparatus comprises an elongated rigid tubular stainless steel defining a longitudinal axis with a closed distal tip and an open proximal end portion; an inflatable balloon mounted in the tubular stainless steel; an anchor mounted to the tubular stainless steel; and a pump fluidly connected to the tubular stainless steel to apply selected fluid pressure to the balloon.

**DESCRIPTION** - A grooved director apparatus to aid in the insertion of a balloon catheter into a vertebra, comprises:

- 1.an elongated rigid tubular stainless steel defining a longitudinal axis with a closed distal tip and an open proximal end portion;
- 2.an inflatable balloon mounted in the tubular stainless steel;
- 3.an anchor mounted to the tubular stainless steel keeping the tubular stainless steel in a fixed position when the balloon is inflated while allowing selective circumferential rotation of the tubular stainless steel when the balloon is deflated; and
- 4.a pump fluidly connected to the tubular stainless steel to apply selected fluid pressure to the balloon.

The tubular stainless steel is cut away from a point along the longitudinal axis to the closed distal tip forming a balloon seat allowing directed expansion of the balloon away from the longitudinal axis toward an area to which compression is to be applied allowing guidance and control of the force of expansion in the vertebra.

An INDEPENDENT CLAIM is also included for a method of expanding a compressed vertebra comprising :

- 1.inserting a grooved director (40) with the built-in balloon into the body of the compressed vertebrae through a trochar insertion sheath;

2. positioning the grooved director with the balloon in a direction under a compressed superior end plate of the vertebral body (20);
3. inflating the balloon (50) so that the force and the direction of the balloon inflation reduces and restores the height of the fractured vertebra;
4. deflating the balloon and rotating the grooved director to a new position within the fractured vertebra and inflating the balloon to create a symmetrical space within the center of the vertebral body;
5. deflating the balloon and removing the grooved director device with the balloon being removed from the trochar insertion sheath;
6. inserting the grooved director without the balloon through the trochar insertion sheath into the space within the center of the vertebral body; and
7. depositing an osteogenic material into the vertebra body.

USE - Used to aid in the insertion of a balloon catheter into a vertebra.

ADVANTAGE - The inventive apparatus is able to guide, concentrate, control and improve the force of balloon compression in a collapsed vertebral body. It can be rotated in the vertebral body to provide selected areas of force against cancerous bone and cortical bone of the vertebral body. It delivers bone graft material or cement into the vertebral body after expansion of same.

DESCRIPTION OF DRAWINGS - The figure is a sectional view of an injection of a grooved director into an interior volume of a vertebra and a balloon expanded against a wall of the damaged vertebra.

20 Vertebral body  
40 Grooved director  
50 Balloon

**Title Terms/Index Terms/Additional Words:** GROOVE; DIRECT; APPARATUS; USEFUL ; AID; INSERT; BALLOON; CATHETER; VERTEBRA; ELONGATE; RIGID; TUBE; STAINLESS; STEEL; INFLATE; ANCHOR; PUMP

**Class Codes**

International Classification (Main): A61F-002/44  
US Classification, Issued: 623017120, 623017120  
File Segment: CPI; EngPI  
DWPI Class: A96; D22; P32  
Manual Codes (CPI/A-M): A12-V03D; D09-C

14/5/4 (Item 4 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0012408507  
WPI ACC NO: 2002-352679/  
Related WPI Acc No: 2001-329401  
XRAM Acc No: C2002-100241  
XRPX Acc No: N2002-277108

**Apparatus for strengthening and augmenting vertebral bodies comprises two successive injections of bone cement of different densities into vertebral body to enable visualization by fluoroscopic X-ray imaging**

Patent Assignee: MURPHY K J (MURP-I)

Inventor: MURPHY K J

**Patent Family (1 patents, 1 countries)**

Patent Number	Kind	Date	Number	Kind	Date	Update
CA 2281335	A1	20010302	CA 2281335	A	19990902	200239 B

Priority Applications (no., kind, date): CA 2281335 A 19990902

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
CA 2281335	A1	EN	23	1	

**Alerting Abstract CA A1**

NOVELTY - Visualization of the **injection** of **bone cement** upon **injection** during percutaneous vertebroplasty by fluoroscopic X-ray imaging uses two kits comprising **bone cement**, the second having a greater density enabling it to be viewed distinctly relative to the first.

DESCRIPTION - An apparatus for strengthening and augmenting vertebral bodies by percutaneous vertebroplasty, comprises injection by a minimally invasive percutaneous approach of **bone cement** into the vertebral body, such that structural integrity results. An injection is made by passing a needle down the pedicle until it enters the vertebral body and reaches the junction of the anterior and middle thirds. **Cement** is **injected** under lateral projection fluoroscopy imaging and stopped as it starts to extend into the disc space, the posterior quarter of the vertebral body, or other unwanted location. A second needle is similarly passed down the other pedicle and advanced into the vertebral body to the junction of the anterior and middle third of the vertebral body. **Cement** was mixed with barium and **injected**. Two kits are prepared, such that a first cement batch (kit A) is of a lower yet sufficient density to inject than the second, such that the second batch of cement (kit B) is of greater density making it possible to see it distinct from the first in lateral projection.

USE - The apparatus is useful for strengthening and augmenting vertebral bodies in the treatment of benign osteoporotic fractures, malignant metastatic disease and benign tumors of the **bone** to achieve pain relief

ADVANTAGE - The procedure is minimally invasive, and enable increased structural integrity with decreased micromotion at the fracture site, with a possible destruction of pain fibers due to the heat of the **bone cement** as its polymerizes and sets

**Title Terms/Index Terms/Additional Words:** APPARATUS; STRENGTH; AUGMENT; VERTEBRA; BODY; COMPRISE; TWO; SUCCESSION; INJECTION; **BONE**; CEMENT; DENSITY; ENABLE; FLUOROSCOPIC; RAY; IMAGE

**Class Codes**

International Classification (Main): A61L-025/00  
(Additional/Secondary): A61B-017/56

File Segment: CPI; EngPI

DWPI Class: A96; D22; P31; P34

Manual Codes (CPI/A-M): A04-F06E5; A12-V03; D09-C01D

14/5/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0009138975

WPI ACC NO: 1999-059975/199905

Related WPI Acc No: 1995-275278; 1997-051751; 1998-593868; 1999-371276; 2000-086828; 2003-209147; 2003-417635; 2003-697288; 2003-776174; 2003-831673; 2004-068737; 2004-090534; 2004-303245; 2004-570775;

2004-615074;	2004-775310;	2005-424623;	2005-424624;	2005-434443;		
2006-342424;	2006-445138					
XRAM Acc No: C1999-017775						
XRXPX Acc No: N1999-044536						
Tool for treating diseased bone using expandable body - includes expandable body inserted through guide tube in collapsed state, and nozzle carried by guide tube for insertion into interior volume of bone						
Patent Assignee: KYPHON INC (KYPH-N); REILEY M A (REIL-I); SCHOLTEN A (SCHO-I); SCRIBNER R M (SCRI-I); TALMADGE K D (TALM-I)						
Inventor: REILEY M A; REO M L; SCHOLTEN A; SCRIBNER R M; TALMADGE K D						
<b>Patent Family (40 patents, 81 countries)</b>						
Patent		Application				
Number	Kind	Date	Number	Kind	Date	Update
WO 1998056301	A1	19981217	WO 1998US11386	A	19980601	199905 B
AU 199877212	A	19981230	AU 199877212	A	19980601	199920 E
US 5972015	A	19991026	US 1997911827	A	19970815	199952 E
NO 199905988	A	20000208	WO 1998US11386	A	19980601	200019 E
			NO 19995988	A	19991206	
EP 987991	A1	20000329	EP 1998925208	A	19980601	200020 E
			WO 1998US11386	A	19980601	
CZ 199904442	A3	20000816	WO 1998US11386	A	19980601	200048 E
			CZ 19994442	A	19980601	
SK 199901677	A3	20000711	WO 1998US11386	A	19980601	200050 E
			SK 19991677	A	19980601	
CN 1259851	A	20000712	CN 1998805973	A	19980601	200054 E
HU 200001956	A2	20001030	WO 1998US11386	A	19980601	200064 E
			HU 20001956	A	19980601	
US 6248110	B1	20010619	US 1994188224	A	19940126	200137 E
			US 1995485394	A	19950607	
			US 1996659678	A	19960605	
			US 1997871114	A	19970609	
US 6280456	B1	20010828	US 1997911827	A	19970815	200151 E
			US 1999404662	A	19990923	
KR 2001013613	A	20010226	KR 1999711623	A	19991209	200154 E
US 20010041896	A1	20011115	US 1994188224	A	19940126	200172 E
			US 1995485394	A	19950607	
			US 1996659678	A	19960605	
			US 1997871114	A	19970609	
			US 1997911805	A	19970815	
			US 2001884365	A	20010619	
JP 2001517997	W	20011009	WO 1998US11386	A	19980601	200174 E
			JP 1999502800	A	19980601	
NZ 501338	A	20011026	NZ 501338	A	19980601	200176 E
			WO 1998US11386	A	19980601	
US 20010049531	A1	20011206	US 1994188224	A	19940126	200203 E
			US 1995485394	A	19950607	
			US 1996659678	A	19960605	
			US 1997871114	A	19970609	
			US 2001754451	A	20010104	
US 20020013600	A1	20020131	US 1997911827	A	19970815	200210 E
			US 1999404662	A	19990923	
			US 2001918942	A	20010731	
AU 752440	B	20020919	AU 199877212	A	19980601	200272 E
NZ 513472	A	20021220	NZ 501338	A	19980601	200309 E
			NZ 513472	A	19980601	
NZ 513473	A	20021220	NZ 501338	A	19980601	200309 E
			NZ 513473	A	19980601	
NZ 513469	A	20030131	NZ 501338	A	19980601	200319 E
			NZ 513469	A	19980601	
NZ 513470	A	20030131	NZ 501338	A	19980601	200319 E
			NZ 513470	A	19980601	

NZ 513471	A	20030131	NZ 501338	A	19980601	200319	E
US 6623505	B2	20030923	NZ 513471	A	19980601		
			US 1997911827	A	19970815	200364	E
			US 1999404662	A	19990923		
			US 2001918942	A	20010731		
US 20030195547	A1	20031016	US 1997911827	A	19970815	200369	E
			US 1999404662	A	19990923		
			US 2001918942	A	20010731		
			US 2003436551	A	20030513		
AU 2002323726	A1	20030403	AU 199877212	A	19980601	200432	NCE
AU 2002323727	A1	20030327	AU 2002323726	A	20021219		
AU 2002323729	A1	20030403	AU 199877212	A	19980601	200432	NCE
AU 2002323730	A1	20030403	AU 2002323729	A	20021219		
AU 2002323731	A1	20030403	AU 199877212	A	19980601	200432	NCE
AU 2002323730	B2	20040930	AU 2002323730	A	20021219		
IL 133257	A	20041110	IL 133257	A	19980601	200480	E
CN 1557257	A	20041229	CN 1998805973	A	19980601	200523	E
US 6899719	B2	20050531	CN 200410036810	A	19980601		
			US 1994188224	A	19940126	200536	E
			US 1995485394	A	19950607		
			US 1996659678	A	19960605		
			US 1997871114	A	19970609		
			US 2001754451	A	20010104		
US 20050119662	A1	20050602	US 1994188224	A	19940126	200537	E
			US 1995485394	A	19950607		
			US 1996659678	A	19960605		
			US 1997871114	A	19970609		
			US 2001754451	A	20010104		
			US 2004958600	A	20041005		
AU 2002323726	B2	20050616	AU 199877212	A	19980601	200545	NCE
JP 2005334671	A	20051208	AU 2002323726	A	20021219		
JP 3722845	B2	20051130	JP 1999502800	A	19980601	200581	E
CN 1153549	C	20040616	JP 2005195467	A	20050704		
US 7044954	B2	20060516	WO 1998US11386	A	19980601	200582	E
			JP 1999502800	A	19980601		
			CN 1998805973	A	19980601	200612	E
			US 1994188224	A	19940126	200633	E
			US 1995485394	A	19950607		
			US 1996659678	A	19960605		
			US 1997871114	A	19970609		
			US 1997911805	A	19970815		
			US 2001884365	A	20010619		

Priority Applications (no., kind, date): US 2004958600 A 20041005; US 2003436551 A 20030513; AU 2002323731 A 20021219; AU 2002323730 A 20021219; AU 2002323729 A 20021219; AU 2002323727 A 20021219; AU 2002323726 A 20021219; US 2001918942 A 20010731; US 2001884365 A 20010619; US 2001754451 A 20010104; US 1999404662 A 19990923; US 1996659678 A 19960605; US 1995485394 A 19950607; US 1994188224 A 19940126; US 1997911827 A 19970815; US 1997871114 A 19970609; US 1997911805 A 19970815

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1998056301	A1	EN	140	71	

National Designated States,Original: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Regional Designated States,Original: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 199877212	A	EN	Based on OPI patent WO 1998056301
NO 199905988	A	NO	PCT Application WO 1998US11386
EP 987991	A1	EN	PCT Application WO 1998US11386
			Based on OPI patent WO 1998056301

Regional Designated States,Original: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

CZ 199904442	A3	CS	PCT Application WO 1998US11386
			Based on OPI patent WO 1998056301
SK 199901677	A3	SK	PCT Application WO 1998US11386
HU 200001956	A2	HU	PCT Application WO 1998US11386
			Based on OPI patent WO 1998056301
US 6248110	B1	EN	C-I-P of application US 1994188224
			C-I-P of application US 1995485394
US 6280456	B1	EN	C-I-P of application US 1996659678
			Division of application US 1997911827
US 20010041896	A1	EN	Division of patent US 5972015
			C-I-P of application US 1994188224
			C-I-P of application US 1995485394
			C-I-P of application US 1996659678
			C-I-P of application US 1997871114
Continuation of application US			
1997911805			
JP 2001517997	W	JA	125 C-I-P of patent US 5827289
			C-I-P of patent US 6248110
			PCT Application WO 1998US11386
			Based on OPI patent WO 1998056301
NZ 501338	A	EN	PCT Application WO 1998US11386
			Future Division patent NZ 513470
US 20010049531	A1	EN	Based on OPI patent WO 1998056301
			C-I-P of application US 1994188224
			C-I-P of application US 1995485394
			C-I-P of application US 1996659678
			Continuation of application US
1997871114			
US 20020013600	A1	EN	C-I-P of patent US 5827289
			Continuation of patent US 6248110
			Division of application US 1997911827
			Division of application US 1999404662
AU 752440	B	EN	Division of patent US 5972015
			Division of patent US 6280456
			Previously issued patent AU 9877212
NZ 513472	A	EN	Based on OPI patent WO 1998056301
			Division of application NZ 501338
NZ 513473	A	EN	Division of patent NZ 501338
			Division of application NZ 501338
NZ 513469	A	EN	Division of patent NZ 501338
			Division of application NZ 501338
			Division of patent NZ 501338

NZ 513470	A	EN	Division of application NZ 501338	
NZ 513471	A	EN	Division of patent NZ 501338 Division of application NZ 501338	
US 6623505	B2	EN	Division of patent NZ 501338 Division of application US 1997911827	
			Division of application US 1999404662	
US 20030195547	A1	EN	Division of patent US 5972015 Division of patent US 6280456 Division of application US 1997911827	
			Division of application US 1999404662	
			Division of application US 2001918942	
AU 2002323726	A1	EN	Division of patent US 5972015 Division of patent US 6280456 Division of application AU 199877212	
AU 2002323727	A1	EN	Division of application AU 199877212	
AU 2002323729	A1	EN	Division of application AU 199877212	
AU 2002323730	A1	EN	Division of application AU 199877212	
AU 2002323731	A1	EN	Division of application AU 199877212	
AU 2002323730	B2	EN	Division of application AU 199877212	
			Previously issued patent AU 2002323730	
IL 133257	A	EN	Based on OPI patent WO 1998056301	
CN 1557257	A	ZH	Division of application CN 1998805973	
US 6899719	B2	EN	C-I-P of application US 1994188224 C-I-P of application US 1995485394 C-I-P of application US 1996659678 Continuation of application US 1997871114	
			C-I-P of patent US 5827289 Continuation of patent US 6248110	
US 20050119662	A1	EN	C-I-P of application US 1994188224 C-I-P of application US 1995485394 C-I-P of application US 1996659678 Continuation of application US 1997871114	
			Continuation of application US 2001754451	
AU 2002323726	B2	EN	C-I-P of patent US 5827289 Continuation of patent US 6248110 Division of application AU 199877212	
			Previously issued patent AU 2002323726	
JP 2005334671	A	JA	56	Division of application JP 1999502800
JP 3722845	B2	JA	52	PCT Application WO 1998US11386 Previously issued patent JP 2001517997

US 7044954 B2 EN

Based on OPI patent WO 1998056301  
C-I-P of application US 1994188224  
C-I-P of application US 1995485394  
C-I-P of application US 1996659678  
C-I-P of application US 1997871114  
Continuation of application US  
1997911805  
C-I-P of patent US 5827289  
C-I-P of patent US 6248110

**Alerting Abstract WO A1**

Tool for inserting into **bone** comprising cortical **bone** containing some cancellous **bone** (32), has a guide tube (72), and an expandable body (56) inserted through guide tube in collapsed state. A nozzle is carried by guide tube for insertion into interior volume (30) of the **bone**.

A first lumen (80) is provided to convey medium to expandable body to compact cancellous **bone** and form cavity in interior volume. A second lumen is connected to nozzle to convey material for discharge into cavity. Four systems, six devices and a sterile kit are also independently claimed.

USE - Treating diseased cancellous **bone** by expanding a body within the **bone** to support cortical **bone** and prevent fracture.

ADVANTAGE - The expandable body can be inserted more easily than known methods. It can be used in vertebrae. It can be inserted where access is not along the axis. It can be inserted and deployed in non-symmetrical volumes. A long cavity can be filled. Therapeutic materials can be delivered within the cavity. Material, including **bone** marrow, can be flushed from the cavity.

**Title Terms/Index Terms/Additional Words:** TOOL; TREAT; DISEASE; **BONE** ; EXPAND; BODY; INSERT; THROUGH; GUIDE; TUBE; COLLAPSE; STATE; NOZZLE; CARRY; INTERIOR; VOLUME

**Class Codes**

International Classification (Main): A01N-057/30, A61B-017/56, A61M-025/00  
(Additional/Secondary): A61F-002/28, A61L-029/00, C07F-009/24

International Classification (+ Attributes)

IPC + Level Value Position Status Version

A61B-0010/00	A	I	R	20060101	
A61B-0017/00	A	N	R	20060101	
A61B-0017/02	A	N	R	20060101	
A61B-0017/12	A	I	R	20060101	
A61B-0017/58	A	I	F	B	20060101
A61B-0017/72	A	I	R	20060101	
A61B-0017/72	A	N	R	20060101	
A61B-0017/74	A	N	R	20060101	
A61B-0017/78	A	N	R	20060101	
A61B-0017/88	A	I	R	20060101	
A61B-0019/00	A	N	R	20060101	
A61B-0019/02	A	N	R	20060101	
A61F-0002/00	A	N	R	20060101	
A61F-0002/28	A	N	R	20060101	
A61F-0002/28	A	I	R	20060101	
A61F-0002/30	A	N	R	20060101	
A61F-0002/36	A	N	R	20060101	
A61F-0002/38	A	N	R	20060101	
A61F-0002/40	A	N	R	20060101	
A61F-0002/42	A	N	R	20060101	
A61F-0002/44	A	I	R	20060101	
A61F-0002/46	A	I	R	20060101	

A61M-0025/10 A I R 20060101  
 A61M-0029/00 A I R 20060101  
 A61B-0010/00 C I R 20060101  
 A61B-0017/00 C N R 20060101  
 A61B-0017/02 C N R 20060101  
 A61B-0017/12 C I R 20060101  
 A61B-0017/68 C I R 20060101  
 A61B-0017/68 C N R 20060101  
 A61B-0017/88 C I R 20060101  
 A61B-0019/00 C N R 20060101  
 A61F-0002/00 C N R 20060101  
 A61F-0002/28 C N R 20060101  
 A61F-0002/28 C I R 20060101  
 A61F-0002/30 C N R 20060101  
 A61F-0002/36 C N R 20060101  
 A61F-0002/38 C N R 20060101  
 A61F-0002/42 C N R 20060101  
 A61F-0002/44 C I R 20060101  
 A61F-0002/46 C I R 20060101  
 A61M-0025/10 C I R 20060101  
 A61M-0029/00 C I R 20060101

US Classification, Issued: 606093000, 606093000, 606192000, 606192000,  
 606192000, 606092000, 606079000, 606191000, 606192000, 606193000,  
 606060000, 606094000, 604096000, 604020000, 606093000, 606092000,  
 606192000, 606192000, 606094000, 606192000, 606192000, 606061000,  
 604096010, 600207000, 606093000, 606192000

File Segment: CPI; EngPI

DWPI Class: A96; D22; P31; P32; P34

Manual Codes (CPI/A-M): A12-V03D; D09-C01

#### 14/5/6 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0007905438 - Drawing available

WPI ACC NO: 1996-372666/199638

XRPX Acc No: N1996-313590

Appliance for inserting block in narrow cavity of long bone - is used for implanting anchor shaft of endoprosthesis and has tubular guide part and expandable balloon type hollow body connected to source of pressure medium

Patent Assignee: ALLO PRO AG (ALLO-N); SULZER ORTHOPAEDIE AG (SULZ)

Inventor: LIMACHER U; MITTELMEIER W

Patent Family (6 patents, 12 countries)

Number	Kind	Date	Application		
			Number	Kind	Date
EP 727197	A1	19960821	EP 1995810107	A	19950217 199638 B
JP 8252275	A	19961001	JP 199613327	A	19960129 199649 E
US 5788703	A	19980804	US 1996582059	A	19960102 199838 E
EP 727197	B1	20010829	EP 1995810107	A	19950217 200150 E
DE 59509559	G	20011004	DE 59509559	A	19950217 200166 E
			EP 1995810107	A	19950217
ES 2161845	T3	20011216	EP 1995810107	A	19950217 200206 E

Priority Applications (no., kind, date): EP 1995810107 A 19950217

#### Patent Details

Number Kind Lan Pg Dwg Filing Notes

EP 727197 A1 DE 9 10

Regional Designated States,Original: AT BE CH DE ES FR GB IT LI NL SE

JP 8252275 A JA 7

EP 727197 B1 DE  
 Regional Designated States,Original: AT BE CH DE ES FR GB IT LI NL SE  
 DE 59509559 G DE Application EP 1995810107  
 Based on OPI patent EP 727197  
 ES 2161845 T3 ES Application EP 1995810107  
 Based on OPI patent EP 727197

#### **Alerting Abstract EP A1**

A tubular guide part (7) is insertable into and retractable from the narrow cavity (2) of the long **bone**. It is joined to an elastically deformable locking element in the form of a balloon-type expandable hollow body (12) which can be positioned in the narrow cavity. The guide part can be attached outside the narrow cavity to a pressurised source (11).

The hollow body can be adjusted between a basic position inside the cross-section of the guide part and removable when pressure is **removed**, and an **expanded** position which it assumes when the pressurised medium is introduced, sealing the cross-section of the narrow cavity. The guide part is connected to a locking piece (13,14).

**USE/ADVANTAGE** - The block can be precisely positioned in the narrow part of the cavity in the **bone** which is thereby securely sealed and the block exerts less pressure on the **bone**.

**Title Terms/Index Terms/Additional Words:** APPLIANCE; INSERT; BLOCK; NARROW; CAVITY; LONG; **BONE**; IMPLANT; ANCHOR; SHAFT; ENDOPROSTHESIS; TUBE; GUIDE ; PART; EXPAND; BALLOON; TYPE; HOLLOW; BODY; CONNECT; SOURCE; PRESSURE; MEDIUM

#### **Class Codes**

International Classification (Main): A61B-017/56, A61F-002/46  
 (Additional/Secondary): A61F-002/28, A61F-002/30  
 US Classification, Issued: 606094000, 606095000

File Segment: EngPI; ;  
 DWPI Class: P31; P32

14/5/7 (Item 7 from file: 350)  
 DIALOG(R) File 350:Derwent WPIX  
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0003660378  
 WPI ACC NO: 1986-101795/198616  
 XRAM Acc No: C1986-043556  
 XRPX Acc No: N1986-074607

**Mfg. inflatable bone canal plug** - comprises inflatable container with releasable valve and wall, which is slowly permeable to inflating gas  
 Patent Assignee: DOW CORNING CORP (DOWO); HAYNES D W (HAYN-I)  
 Inventor: HAYNES D W

#### **Patent Family (2 patents, 10 countries)**

Patent Number	Application					
	Kind	Date	Number	Kind	Date	Update
EP 178174	A	19860416	EP 1985307251	A	19851010	198616 B
US 4697584	A	19871006	US 1984659975	A	19841012	198742 E

Priority Applications (no., kind, date): US 1984659975 A 19841012

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 178174	A	EN	23	10	

Regional Designated States,Original: BE CH DE FR GB IT LI NL SE

**Alerting Abstract EP A**

A plug for restricting flow of cement for fixing an artificial joint prosthesis stem in the canal comprises an expandable elastomer container to fit in the canal with a resealable valve at the end opposite to the inserted into the canal for injection of **inflation** fluid, which is gradually **released** to reduce internal pressure to a min. after a given time.

The container is pref. of silicone elastomer, partic. polydimethylsiloxane, and is inflated with CO<sub>2</sub> or He, partic. CO<sub>2</sub>, which can permeate controllably through the elastomer. The container is pref. generally cylindrical and expands so that its length parallel to the canal axis is at least twice its dia..

USE/ADVANTAGE - E.g. for use with hip joint prosthesis, reduces stressing of canal walls to decrease risk of **bone** resorption and remodelling.

**Equivalent Alerting Abstract US A**

A **bone** plug for the open-ended intra-medullary canal comprises an elastomeric expandable container, and a valve for injecting bio-compatible fluid under pressure into the container.

The fluid is controllably released into the canal to a min. preselected amount within a predetermined time.

USE - Prevents flow of **bone** cement into the canal during artificial joint insertion. (11pp)

**Title Terms/Index Terms/Additional Words:** MANUFACTURE; INFLATE; **BONE** ; CANAL; PLUG; COMPRISE; CONTAINER; RELEASE; VALVE; WALL; SLOW; PERMEABLE; GAS

**Class Codes**

International Classification (Main): A61F-002/30

(Additional/Secondary): A61F-005/04

US Classification, Issued: 606095000

File Segment: CPI; EngPI

DWPI Class: A26; A96; D22; P32

Manual Codes (CPI/A-M): A06-A00E3; A12-V02; D09-C01D

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17/5/1 (Item 1 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0015996237 - Drawing available  
WPI ACC NO: 2006-527907/200654  
Related WPI Acc No: 2006-513389  
XRAM Acc No: C2006-165227  
XRXPX Acc No: N2006-422858

Bone tissue treatment method for use during treatment of osteoporosis, involves expanding semi-compliant structure in bone cavity by injecting bone supporting material to provide structural support to bone tissue  
Patent Assignee: CELONOVA BIOSCIENCES INC (CELO-N)

Inventor: RICHTER G M

Patent Family (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 20060155296	A1	20060713	US 2005641968	P	20050107	200654 B
			US 2006328345	A	20060109	

Priority Applications (no., kind, date): US 2005641968 P 20050107; US 2006328345 A 20060109

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes	
US 20060155296	A1	EN	12	7	Related to Provisional	US 2005641968

#### Alerting Abstract US A1

NOVELTY - Bone treatment involves inserting a device into the interior area of bone tissue to be treated, and internally supporting the bone tissue using the device during treatment.

DESCRIPTION - An INDEPENDENT CLAIM is also included for treating device, comprising a catheter, and expandable semi-compliant structure, and a removable fastener, which connects the catheter to the semi-compliant structure.

USE - For use during treatment of osteoporosis, osteoporotic fractured metaphyseal and epiphyseal bones, osteoporotic vertebrae, fractures of vertebrae due to tumors, round cell tumors, avascular necrosis of epiphyses of long bones, avascular necrosis of proximal femur, distal femur and proximal humerus, defects resulting from endocrine conditions, metastatic tumors, and fracture of cervical, thoracic, lumbar and sacral fractures (claimed).

ADVANTAGE - The exfiltration of the bone support material from the fracture site is prevented by the sealable port. The infiltration of the biological fluid into the semi-compliant structure is prevented so as to improve durability of the semi-compliant structure by preventing corrosion and degradation of its walls. The semi-compliant structure is removed from the fracture site easily, without damaging the bone tissue.

DESCRIPTION OF DRAWINGS - The figure shows a side view of the semi-compliant structure and catheter in cancellous bone of vertebrae.

17 Cancellous bone tissue

49 Semi-compliant structure

67 Catheter

74 Cavity

Title Terms/Index Terms/Additional Words: BONE ; TISSUE; TREAT; METHOD; OSTEOPOROSIS; EXPAND; SEMI; COMPLIANT; STRUCTURE; CAVITY; INJECTION; SUPPORT; MATERIAL

#### Class Codes

International Classification (+ Attributes)  
IPC + Level Value Position Status Version  
**A61F-0002/34** A I F B 20060101  
**A61F-0002/32** C I F B 20060101  
US Classification, Issued: 606094000

File Segment: CPI; EngPI  
DWPI Class: A96; B07; D22; P32  
Manual Codes (CPI/A-M): A12-V02; B04-B04E; B04-C02C; B04-C03; B11-C04B;  
D05-H08; D05-H10; D09-C01D

17/5/3 (Item 3 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0015410401 - Drawing available  
WPI ACC NO: 2005-756351/200577  
XRAM Acc No: C2005-230839  
XRXPX Acc No: N2005-623986

**Cavity creation device for creating cavity in mammalian tissue, includes holding sleeve to contain elastomeric material in co-axial communication with bumper, and plunger forcing the elastomeric material against the bumper**

Patent Assignee: ADVANCED BIOMATERIAL SYSTEMS INC (ADBI-N); CARR J N (CARR-I); CARR J P (CARR-I); KULIK M (KULI-I)

Inventor: CARR J N; CARR J P; KULIK M

**Patent Family (2 patents, 107 countries)**

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 20050234493	A1	20051020	US 2004558330	P	20040331	200577 B
			US 2004558860	P	20040402	
			US 200594620	A	20050330	
WO 2005096970	A2	20051020	WO 2005US10785	A	20050330	200577 E

Priority Applications (no., kind, date): US 2004558860 P 20040402; US 2004558330 P 20040331; US 200594620 A 20050330

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20050234493	A1	EN	58	40	Related to Provisional US 2004558330
					Related to Provisional US 2004558860

WO 2005096970 A2 EN

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Regional Designated States,Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

#### Alerting Abstract US A1

NOVELTY - A cavity creation device comprises a holding sleeve to contain an elastomeric material, in co-axial communication with a bumper; and a plunger for insertion in the holding sleeve. When the sleeve contains an elastomeric material and the plunger is inserted into the sleeve, operation of the plunger forces the elastomeric material against the bumper. The bumper causes the elastomeric material forced against it to expand and create a cavity.

**DESCRIPTION - INDEPENDENT CLAIMS** are also included for:

- 1.a kit for assembly into a device for creating a cavity in mammalian tissue comprising a bumper, a holding sleeve for operative communication with the bumper, an elastomeric material for insertion into the holding sleeve, and a plunger for insertion into the holding sleeve;
- 2.a device for creating and filling a cavity in a mammalian body comprising an apparatus for dispensing a biocompatible filler, and an elastomeric casing attached to the apparatus; and
- 3.a method for creating and filling a cavity in a mammalian tissue comprising inserting an elastomeric casing in the tissue, and filling the casing with a biocompatible filler to expand the casing.

**USE** - For cavity creation in a mammalian **bone** tissue, e.g. cancellous **bone** tissue of mammalian vertebrae, by inserting the elastomeric material into the tissue, **expanding** and contracting the material, and **removing** the material from the tissue (claimed).

**ADVANTAGE** - The invention allows the elastomeric material to resume its original shape

**DESCRIPTION OF DRAWINGS** - The figure shows a perspective view of a cavity creation assembly.

1050 Delivery tube device  
1060 Delivery tube device handle  
1070 Elastomer  
1090 Guide rod  
1100 Bumper

**Title Terms/Index Terms/Additional Words:** CAVITY; CREATION; DEVICE; MAMMAL; TISSUE; HOLD; SLEEVE; CONTAIN; ELASTOMER; MATERIAL; CO; AXIS; COMMUNICATE ; BUMPER; PLUNGE; FORCE

**Class Codes**

International Classification (Main): A61B-017/58  
US Classification, Issued: 606181000

File Segment: CPI; EngPI  
DWPI Class: A96; D22; P31  
Manual Codes (CPI/A-M): A12-V02; A12-V03D; D09-C01D

17/5/4 (Item 4 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0014631779 - Drawing available  
WPI ACC NO: 2004-813778/  
XRAM Acc No: C2004-283097  
XRDX Acc No: N2004-642223

Bone fixture apparatus e.g. bone plate or intra-medullary nail useful for supporting fractured bone comprises pliable insert for engaging fixing device

Patent Assignee: UNIV GRAMPIAN HOSPITALS NHS TRUST (UYGR-N)  
Inventor: JOHNSTONE A J

Patent Family (1 patents, 106 countries)

Patent Number	Kind	Date	Number	Kind	Date	Update
WO 2004096067	A2	20041111	WO 2004GB1867	A	20040429	200480 B

Priority Applications (no., kind, date): GB 20039695 A 20030429

**Patent Details**

Number Kind Lan Pg Dwg Filing Notes  
WO 2004096067 A2 EN 50 18

National Designated States, Original: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Regional Designated States, Original: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

**Alerting Abstract WO A2**

NOVELTY - A **bone** fixture apparatus comprises a pliable insert (72) for engaging a fixing device and at least one tapered hole to receive the respective fixing device. The pliable material is settable, self-expanding and biodegradable or bioabsorbable.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- 1.a method of supporting a fractured bone ; and
- 2.the pliable insert for engaging a bone fixture apparatus.

USE - As a **bone** plate or intra-medullary nail (claimed) for supporting a fractured **bone** .

ADVANTAGE - The pliable insert allows the screw to be driven through the plate etc. a number of times of different angles. The biodegradable material is firmly attached to the **bone** without allowing any movement only in the initial phase of the fracture, so that it can take the loading normally applied to the fractured area of **bone** arising from everyday use. The biodegradable insert can assist in removal of implant, as by time the **bone** has healed, the pliable material would have been eroded, and the fixing can be more easily **removed** . The settable and self- **expanding** pliable material can change phase (e.g. from **paste** , gel or liquid to a solid) on application of pressure or heat, when exposed to a chemical catalyst, or after an interval of time. Increased grip between screw and cylinder, and between the cylinder and nail helps to keep the screw stationary with respect to the nail, thus preventing or restraining movement of the nail in the **bone** which can disrupt the healing process. The insert can be inserted into the hole without any external heating or special application of extra force, so the insert can easily be inserted into any suitable hole at any time before or during the operation with an easy press-fit. The axis of the screw is not co-axial with axis of the hole to allow the selection of the angle of insertion of the screw, without surgeon being forced to change the orientation of the hole or the **bone** plate.

DESCRIPTION OF DRAWINGS - The figure shows a cross-sectional view of the **bone** plate and pliable insert, having a screw driven through the insert.

- 64' Hole
- 66 Upper surface of plate
- 68 Lower surface of plate
- 72 Insert
- 82 Screw
- 84 Screw head
- 86 Shaft of screw

Title Terms/Index Terms/Additional Words: **BONE** ; FIX; APPARATUS; PLATE;

INTRA; MEDULLARY; NAIL; USEFUL; SUPPORT; FRACTURE; COMPRISE; PLIABLE;  
INSERT; ENGAGE; DEVICE

**Class Codes**

International Classification (Main): A61B-017/72

File Segment: CPI; EngPI

DWPI Class: A96; D22; P31

Manual Codes (CPI/A-M): A09-A07; A12-V02; D09-C01D

17/5/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0014584144 - Drawing available

WPI ACC NO: 2004-766106/200475

Related WPI Acc No: 2006-492526

XRAM Acc No: C2004-268587

XRXPX Acc No: N2004-604438

**Tissue anchoring device for use in anchoring tissue to bone in surgical operation, comprises implant made of flexible wall, sutures fastened with implant, and pasty medicine**

Patent Assignee: A SPINE HOLDING GROUP CORP (ASPI-N)

Inventor: LIN C; LIN G; LIN G G; LIN J; LIN K

**Patent Family (5 patents, 3 countries)**

Patent		Application				
Number	Kind	Date	Number	Kind	Date	Update
US 20040220615	A1	20041104	US 2003611997	A	20030703	200475 B
JP 2004329859	A	20041125	JP 2003274962	A	20030715	200477 E
TW 587933	A	20040521	TW 2003110213	A	20030430	200481 E
TW 200422029	A	20041101	TW 2003110213	A	20030430	200612 E
JP 3781190	B2	20060531	JP 2003274962	A	20030715	200636 E

Priority Applications (no., kind, date): TW 2003110213 A 20030430

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes	
US 20040220615	A1	EN	13	6		
JP 2004329859	A	JA	12			
TW 587933	A	ZH				
TW 200422029	A	ZH				
JP 3781190	B2	JA	12		Previously issued patent	JP 2004329859

**Alerting Abstract US A1**

NOVELTY - Tissue anchoring device (10) comprises implant (11) made of flexible wall, sutures fastened with the implant, and pasty medicine. The implant is provided with holding portion and injection port. The injection port is in communication with holding portion. The holding portion is enclosed by flexible wall provided with pores. Each pore has diameter smaller than 0.1 mm. The implant is contractible and is contracted prior to being inserted into bone .

DESCRIPTION - Tissue anchoring device comprises an implant made of flexible wall (111, 112), sutures fastened with the implant, and pasty medicine. The implant is provided with a holding portion (114) and an injection port (115). The injection port is in communication with the holding portion. The holding portion is enclosed by the flexible wall provided with pores (113). Each pore has a diameter smaller than 0.1 mm. The implant is contractible and is contracted prior to being inserted into the bone . The pasty medicine is capable of solidification injected into

the holding portion via the injection port of the implant in the wake of insertion of the implant into the **bone**, thus resulting in expansion of the implant to enable the implant to be securely lodged in the **bone** upon completion of the solidification of the pasty medicine.

USE - For use in anchoring tissue to **bone** in surgical operation.

ADVANTAGE - The invention provides good anchoring effect. It allows sutures to be integrally knitted to the flexible wall of implant without forming the thread hole.

DESCRIPTION OF DRAWINGS - The figure shows perspective view of the implants and surgical sutures of the invention.

10 Tissue anchoring device

11 Implant

21 Thread

111, 112 Flexible wall

113 Pores

114 Holding portion

115 Injection port

**Title Terms/Index Terms/Additional Words:** TISSUE; ANCHOR; DEVICE; **BONE** ; SURGICAL; OPERATE; COMPRISE; IMPLANT; MADE; FLEXIBLE; WALL; SUTURE; FASTEN; **PASTE** ; MEDICINE

**Class Codes**

International Classification (Main): **A61B-017/56** , **A61F-002/28**  
(Additional/Secondary): A61L-024/00

International Classification (+ Attributes)

IPC + Level Value Position Status Version

**A61B-0017/56** A I F B 20060101

**A61F-0002/28** A I L B 20060101

**A61B-0017/00** A N R 20060101

**A61B-0017/04** A I R 20060101

**A61B-0017/00** C N R 20060101

**A61B-0017/04** C I R 20060101

US Classification, Issued: 606232000

File Segment: CPI; EngPI

DWPI Class: A96; P31; P32; P34

Manual Codes (CPI/A-M): A12-V02; D09-C01D

17/5/6 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0013484760 - Drawing available

WPI ACC NO: 2003-576880/200354

Related WPI Acc No: 2003-298357

XRAM Acc No: C2003-155792

XRXPX Acc No: N2003-458569

Medical apparatus for joint prosthesis implantation, has shield with coaxial shield structures and flexible beam portions extending along inflatable elastomeric sleeve

Patent Assignee: HAJIANPOUR M A (HAJI-I)

Inventor: HAJIANPOUR M A

Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20030097136	A1	20030522	US 2000590039	A	20000608	200354 B
			US 2002300260	A	20021120	
US 7001395	B2	20060221	US 2002300260	A	20021120	200615 E

Priority Applications (no., kind, date): US 2000590039 A 20000608; US  
2002300260 A 20021120

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030097136	A1	EN	16	27	C-I-P of application US 2000590039 C-I-P of patent US 6506194

**Alerting Abstract US A1**

NOVELTY - A shield (30) has coaxial shield structures with distal end (32), proximal end and flexible beam portions extending along an inflatable elastomeric sleeve (23). The beam portions curve outwards with inflation of the sleeve, and the central portions of the beam, are separated from each other. An elongated insertion tool (16) connected to the sleeve, has a passage for the fluid injected into the passage of core (12).

USE - For plugging open end of intramedullary bone canal to restrict flow of bone select during fixation of stem of artificial joint prosthesis to end of bone , and also during fixation of hip joint prosthesis to proximal femur.

ADVANTAGE - Shield is more resistant to damage from sharp objects and the bone plug having elastomeric sleeve is protected from puncture by bone sprinters and sharp bone edges.

DESCRIPTION OF DRAWINGS - The figure shows the longitudinal cross-sectional view of bone plug.

12 core  
16 insertion tool  
23 elastomeric sleeve  
30 shield  
32 distal end

**Title Terms/Index Terms/Additional Words:** MEDICAL; APPARATUS; JOINT; PROSTHESIS; IMPLANT; SHIELD; COAXIAL; STRUCTURE; FLEXIBLE; BEAM; PORTION; EXTEND; INFLATE; ELASTOMER; SLEEVE

**Class Codes**

International Classification (Main): **A61B-017/56**  
International Classification (+ Attributes)  
IPC + Level Value Position Status Version  
**A61B-0017/56** A I F B 20060101  
US Classification, Issued: 606095000, 606092000, 606095000

File Segment: CPI; EngPI  
DWPI Class: A96; D22; P31  
Manual Codes (CPI/A-M): A12-V03D; D09-C01D

17/5/7 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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0013256965 - Drawing available  
WPI ACC NO: 2003-342470/200332  
Related WPI Acc No: 2002-537147; 2004-533947  
XRAM Acc No: C2003-089843  
XRPX Acc No: N2003-274000  
**Orthopedic fixation rod for stabilizing implant within body, comprises elongated tubular inflatable balloon with interior chamber and accelerator for accelerating curing of curable media into chamber**  
Patent Assignee: VERTELINK CORP (VERT-N)

Inventor: DABNEY J H; NGUYEN T V; PHAM T V; SHAOLIAN S M; TEITELBAUM G P;  
VAN NGUYEN T

**Patent Family (6 patents, 100 countries)**

Patent		Application					
Number	Kind	Date	Number	Kind	Date	Update	
WO 2003020110	A2	20030313	WO 2002US27516	A	20020828	200332	B
US 6749614	B2	20040615	US 2000213385	P	20000623	200439	E
			US 2000747066	A	20001221		
			US 2001943636	A	20010829		
			US 2001976459	A	20011010		
EP 1437974	A2	20040721	EP 2002757460	A	20020828	200447	E
			WO 2002US27516	A	20020828		
AU 2002323477	A1	20030318	AU 2002323477	A	20020828	200452	E
JP 2005501585	W	20050120	WO 2002US27516	A	20020828	200508	E
			JP 2003524429	A	20020828		
US 6899713	B2	20050531	US 2000213385	P	20000623	200536	E
			US 2000747066	A	20001221		
			US 2001943636	A	20010829		

Priority Applications (no., kind, date): US 2000747066 A 20001221; US 2000213385 P 20000623; US 2001976459 A 20011010; US 2001943636 A 20010829; US 2002161554 A 20020531

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2003020110	A2	EN	77	52	

National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

Regional Designated States,Original: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

US 6749614 B2 EN Related to Provisional US 2000213385  
C-I-P of application US 2000747066

C-I-P of application US 2001943636  
PCT Application WO 2002US27516

Based on OPI patent WO 2003020110

EP 1437974 A2 EN  
Related to Provisional US 2000213385  
C-I-P of application US 2000747066

Regional Designated States,Original: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

AU 2002323477 A1 EN Based on OPI patent WO 2003020110

JP 2005501585 W JA 126 PCT Application WO 2002US27516

Based on OPI patent WO 2003020110

US 6899713 B2 EN Related to Provisional US 2000213385

C-I-P of application US 2000747066

Alerting Abstract WO A2

NOVELTY - An in situ formable orthopedic fixation rod, comprises an elongated tubular balloon (114) having an interior chamber and inflatable from a first insertion profile to second, enlarged profile and an accelerator for accelerating the curing of a curable media into the chamber.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. an orthopedic fixation device (102) which comprises an elongated flexible tubular body (TB) (104) having a distal end (108) and proximal end (106) body forming a central lumen, manifold (124) at the proximal end with an inflatable member (IM) having proximal and distal ends and an interior removably attached to distal end, heat source in thermal communication with interior of IM and valve provided at proximal end;

- 2.a method for stabilizing an orthopedic fracture which involves inserting two anchors with portals into a bone , delivering an orthopedic device with balloon to the bone , inflating balloon with stiffening material and heating the media above body temperature to accelerate stiffening of the stiffening material. The orthopedic device extends through portals, such that inflating fixes and anchors in relation to one another;
- 3.a method for forming an orthopedic device at a treatment site within the body of a patient which involves positioning an outer wall at the treatment site in which the outer wall forming a chamber, introducing a hardenable media into the chamber and heating the media to accelerate hardening to form orthopedic device;
- 4.a method for treating a patient which involves securing a first rod at first site in patient, securing a second rod at second site, introducing a curable media between first and second rods to form a cross link and heating the media at 50(deg)C to accelerate curing of the media thereby linking the first rod to the second rod; and
- 5.a deployment catheter for deploying an implantable inflatable orthopedic device which comprises an elongated flexible TB, inflatable device removably carried by distal end, energy source connected to proximal end and heating element in thermal communication with the inflatable device.

USE - For forming implantable and inflatable orthopedic fixation and for stabilizing implants within the body.

ADVANTAGE - The device enables the access treatment site within the body by using minimally invasive procedures.

DESCRIPTION OF DRAWINGS - The figure shows a side elevational view of delivery catheter with inflatable fixation device.

- 100 Delivery catheter
- 102 Orthopedic fixation device
- 104 Tubular body
- 106 Proximal end of tubular body
- 108 Distal end of tubular body
- 110 Inner sleeve
- 112 Outer sleeve
- 114 Balloon
- 120 Reinforcement element
- 122 Stiffening wire
- 124 Manifold

**Title Terms/Index Terms/Additional Words:** ORTHOPAEDIC; FIX; ROD; STABILISED ; IMPLANT; BODY; COMPRISE; ELONGATE; TUBE; INFLATE; BALLOON; INTERIOR; CHAMBER; ACCELERATE; CURE; MEDIUM

**Class Codes**

International Classification (Main): A61B , A61B-017/56 , A61B-017/58  
US Classification, Issued: 606061000, 606061000

File Segment: CPI; EngPI; EPI  
DWPI Class: A96; D22; S05; P31; P32  
Manual Codes (EPI/S-X): S05-F03  
Manual Codes (CPI/A-M): A12-V02; A12-V03B; D09-C01; D09-C01D

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0013213815 - Drawing available  
WPI ACC NO: 2003-298357/  
Related WPI Acc No: 2003-576880  
XRAM Acc No: C2003-077638  
XRXPX Acc No: N2003-237225

**Apparatus for stopping flow of bone cement , comprises bone plug with inflatable structure, core and shield which is more resistance to damage, and elongated insertion tool with tool passageway**

Patent Assignee: HAJIANPOUR M A (HAJI-I)

Inventor: HAJIANPOUR M A

**Patent Family** (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 6506194	B1	20030114	US 2000590039	A	20000608	200329 B

Priority Applications (no., kind, date): US 2000590039 A 20000608

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6506194	B1	EN	11	14	

#### **Alerting Abstract US B1**

**NOVELTY** - An apparatus for stopping flow of **bone cement** through a channel comprises a **bone** plug and an elongated insertion tool (EIT). The **bone** plug includes an inflatable structure (IS), a core and a shield which is more resistance to damage from sharp objects than IS. The EIT is removably connected to the core and includes a tool passageway for fluid injected into the core passageway.

**DESCRIPTION** - An apparatus for plugging a channel within a **bone** to stop the flow of **bone cement** through the channel comprises a **bone** plug (10) and an elongated insertion tool (EIT). The **bone** plug which is insertable within the channel includes an inflatable structure (IS), a core (12) with a distal portion extending beyond a distal portion of IS and attached to IS, a shield (30) extending from the distal portion of the core outwardly around and along IS and a valve admitting a fluid (38) into IS and preventing a flow of fluid from IS. The core includes a core passageway for the fluid injected into the inflatable structure. The shield which expands with inflation of IS is substantially more resistance to damage from sharp objects than IS. The EIT is removably connected to the core and includes a tool passageway for the fluid injected into the core passageway.

**USE** - The invention is a medical device for use in the implantation of joint prosthesis at the end of a **bone** and is also used as a plug for stopping the flow of **bone cement** (claimed).

**ADVANTAGE** - Since the **bone** plug has an elastomeric inflatable structure, the **bone** plug is protected from puncture by **bone** splinters and sharp **bone** edges. The shield structure expands greatly without stretching the material. The invention is easily manufactured and the plug and insertion tool are easily disconnected once proper insertion has been undertaken.

**DESCRIPTION OF DRAWINGS** - The figure shows the longitudinal cross-sectional view of the **bone** plug with the inflatable sleeve in a fully inflated condition.

10bone plug

12core

30shield

38fluid

**Title Terms/Index Terms/Additional Words:** APPARATUS; STOP; FLOW; **BONE** ; **CEMENT** ; COMPRISE; PLUG; INFLATE; STRUCTURE; CORE; SHIELD; MORE;

RESISTANCE; DAMAGE; ELONGATE; INSERT; TOOL; PASSAGE

**Class Codes**

International Classification (Main): **A61B-017/72**

US Classification, Issued: 606095000, 606092000

File Segment: CPI; EngPI

DWPI Class: A96; P31

Manual Codes (CPI/A-M): A04-G03E1; A12-H; A12-V02

**17/5/9 (Item 9 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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0011090308 - Drawing available

WPI ACC NO: 2002-025876/200203

Related WPI Acc No: 2000-237393; 2002-098189; 2002-269424; 2005-683834

XRAM Acc No: C2002-007207

XRXPX Acc No: N2002-020011

**Treatment and prevention of vertebral compression fracture involves inserting cavity-forming device into cancellous bone , creating cavity and barrier region of compressed cancellous bone , and filling the cavity with filler**

Patent Assignee: KYPHON INC (KYPH-N)

Inventor: BASISTA J J; BOUCHER R; BOUCHER R P; FOLLMER M; LAYNE R; LAYNE R W; OSORIO R; OSORIO R A; TALMADGE K; TALMADGE K D; BOUCHER P; LAYNE W; OSORIO A; TALMADGE D

**Patent Family (14 patents, 93 countries)**

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
WO 2001076514	A2	20011018	WO 2001US11456	A	20010405	200203 B
AU 200153267	A	20011023	AU 200153267	A	20010405	200213 E
US 20020161373	A1	20021031	US 2000194685	P	20000405	200274 E
			US 2001827260	A	20010405	
EP 1272131	A2	20030108	EP 2001926753	A	20010405	200311 E
			WO 2001US11456	A	20010405	
KR 2002091179	A	20021205	KR 2002713399	A	20021005	200324 E
CN 1427700	A	20030702	CN 2001809097	A	20010405	200361 E
JP 2003530151	W	20031014	JP 2001574036	A	20010405	200368 E
			WO 2001US11456	A	20010405	
US 20030220648	A1	20031127	US 2000194685	P	20000405	200378 E
			US 2001827260	A	20010405	
			US 2003420206	A	20030422	
US 20030233096	A1	20031218	US 2000194685	P	20000405	200401 E
			US 2001827260	A	20010405	
			US 2003397049	A	20030325	
US 6726691	B2	20040427	US 1998134323	A	19980814	200429 E
			US 2000194685	P	20000405	
			US 2001827260	A	20010405	
AU 2001253267	A2	20011023	AU 2001253267	A	20010405	200433 E
US 20040167562	A1	20040826	US 1998134323	A	19980814	200457 E
			US 2000194685	P	20000405	
			US 2001827260	A	20010405	
			US 2004783723	A	20040220	
EP 1272131	B1	20060301	EP 2001926753	A	20010405	200617 E
			WO 2001US11456	A	20010405	
DE 60117524	T2	20060817	DE 60117524	A	20010405	200655 E
			EP 2001926753	A	20010405	
			WO 2001US11456	A	20010405	

Priority Applications (no., kind, date): US 2004783723 A 20040220; US

2003420206 A 20030422; US 2003397049 A 20030325; US 2001827260 A  
20010405; US 1998134323 A 19980814; US 2000194685 P 20000405

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2001076514	A2	EN	60	20	
National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Regional Designated States,Original: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200153267	A	EN			Based on OPI patent WO 2001076514
US 20020161373	A1	EN			Related to Provisional US 2000194685
EP 1272131	A2	EN			PCT Application WO 2001US11456
					Based on OPI patent WO 2001076514
Regional Designated States,Original: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003530151	W	JA	60		PCT Application WO 2001US11456
					Based on OPI patent WO 2001076514
US 20030220648	A1	EN			Related to Provisional US 2000194685
					Division of application US 2001827260
US 20030233096	A1	EN			Related to Provisional US 2000194685
US 6726691	B2	EN			C-I-P of application US 2001827260
					C-I-P of application US 1998134323
					Related to Provisional US 2000194685
AU 2001253267	A2	EN			C-I-P of patent US 6241734
US 20040167562	A1	EN			Based on OPI patent WO 2001076514
					C-I-P of application US 1998134323
					Related to Provisional US 2000194685
					Division of application US 2001827260
					C-I-P of patent US 6241734
EP 1272131	B1	EN			Division of patent US 6726691
					PCT Application WO 2001US11456
					Based on OPI patent WO 2001076514
Regional Designated States,Original: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
DE 60117524	T2	DE			Application EP 2001926753
					PCT Application WO 2001US11456
					Based on OPI patent EP 1272131
					Based on OPI patent WO 2001076514

**Alerting Abstract WO A2**

NOVELTY - A vertebral compression fracture is treated or prevented by inserting an insertion device into a vertebral body; inserting a cavity-forming device through the insertion device into a cancellous **bone** (115) in the vertebral body (105); displacing cancellous **bone** to create a cavity (170) and a barrier region of compressed cancellous **bone**; and filling the cavity with a filler (180).

DESCRIPTION - An INDEPENDENT CLAIM is also included for a balloon catheter comprising a lumen within the tube, an expandable material, and an opening communicating with the lumen.

USE - For treating, i.e. repairing, reinforcing, and/or treating fractured and/or diseased **bone**.

ADVANTAGE - The method obviates the need for high pressure injection of **bone** filler, thus reducing the possibilities of **cement** leakage and/or extravazation outside of the **bone**. The creation of flow paths permits greater control in the placement of the **bone** filler material within the

vertebral body.

DESCRIPTION OF DRAWINGS - The figure is a lateral view of a lumbar vertebra.

105 Vertebral body  
115 Cancellous bone  
170 Cavity  
180 Filler

**Title Terms/Index Terms/Additional Words:** TREAT; PREVENT; VERTEBRA; COMPRESS; FRACTURE; INSERT; CAVITY; FORMING; DEVICE; **BONE**; BARRIER; REGION; FILL

**Class Codes**

International Classification (Main): **A61B-017/56**  
(Additional/Secondary): **A61M-025/00**, A61L-027/00

International Classification (+ Attributes)

IPC + Level Value Position Status Version

<b>A61B-0017/00</b>	A	N	R	20060101	
<b>A61B-0017/16</b>	A	N	R	20060101	
<b>A61B-0017/88</b>	A	I	R	20060101	
<b>A61B-0019/00</b>	A	N	R	20060101	
<b>A61B-0019/02</b>	A	N	R	20060101	
<b>A61F-0002/00</b>	A	N	R	20060101	
<b>A61F-0002/28</b>	A	N	R	20060101	
<b>A61F-0002/30</b>	A	N	R	20060101	
<b>A61F-0002/44</b>	A	N	R	20060101	
<b>A61F-0002/46</b>	A	I	F	B	
<b>A61F-0002/46</b>	A	I		R	20060101
<b>A61L-0027/56</b>	A	I	L	B	20060101
<b>A61M-0025/10</b>	A	I	L	B	20060101
<b>A61B-0017/00</b>	C	N	R	20060101	
<b>A61B-0017/16</b>	C	N	R	20060101	
<b>A61B-0017/88</b>	C	I	R	20060101	
<b>A61B-0019/00</b>	C	N	R	20060101	
<b>A61F-0002/00</b>	C	N	R	20060101	
<b>A61F-0002/28</b>	C	N	R	20060101	
<b>A61F-0002/30</b>	C	N	R	20060101	
<b>A61F-0002/44</b>	C	N	R	20060101	
<b>A61F-0002/46</b>	C	I		R	20060101
<b>A61L-0027/00</b>	C	I	L	B	20060101

US Classification, Issued: 606086000, 606086000, 606086000, 606192000,  
606094000

File Segment: CPI; EngPI

DWPI Class: A96; B07; D22; P31; P32; P34

Manual Codes (CPI/A-M): A99-A; B04-C03; B11-C04A; B14-N01; D09-C04

17/5/10 (Item 10 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0008909347 - Drawing available  
WPI ACC NO: 1998-459462/199840

XRPX Acc No: N1998-358857

Cement restrictor system for creating cement plug with medullary canal of long bone - has conduit defining fluid passage to and from inflatable body and shield releasably securable to conduit and placed in medullary canal and beyond isthmus of long bone for making cement plug

Patent Assignee: JOHNSON & JOHNSON PROFESSIONAL (JOHJ)

Inventor: MASTRORIO B; MASTRORIO B W; OSTIGUY P S

**Patent Family** (4 patents, 3 countries)

Patent Number	Kind	Date	Number	Kind	Date	Update
GB 2323293	A	19980923	GB 19985920	A	19980319	199840 B
US 5849014	A	19981215	US 1997821608	A	19970320	199906 E
JP 10337298	A	19981222	JP 199889562	A	19980319	199910 E
GB 2323293	B	20010502	GB 19985920	A	19980319	200126 E

Priority Applications (no., kind, date): US 1997821608 A 19970320

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
GB 2323293	A	EN	14	7	
JP 10337298	A	JA	6		

**Alerting Abstract GB A**

The system has a conduit (18), which includes a flexible, single or multiple lumen catheter that is enveloped near a distal end by an inflatable body (16). One or more openings (24) in the catheter (18) near the distal end permit fluid to be introduced and evacuated from the inflatable body.

An intermediate portion of the catheter with the integral inflatable body is within an internal passage of a (semi) rigid tubular guide (26), while an apertured shield (20) abuts a distal end of the tubular, and a portion of the catheter extends through the aperture and beyond the shield. The shield is releasably engageable with the tubular guide so that the tubular guide can be used to position the shield within the medullar canal and then be separated from the shield.

USE - For arthroplasty procedures such as total hip replacement

ADVANTAGE - Well suited to revision arthroplasty. Allows creation of the cement plug at any selected point within the long bone, including points beyond the isthmus.

**Title Terms/Index Terms/Additional Words:** CEMENT ; RESTRICT; SYSTEM; PLUG; MEDULLARY; CANAL; LONG; BONE ; CONDUIT; DEFINE; FLUID; PASSAGE; INFLATE; BODY; SHIELD; RELEASE; SECURE; PLACE; ISTHMUS

**Class Codes**

International Classification (Main): A61B-017/56 , A61F-002/46  
US Classification, Issued: 606094000, 606095000

File Segment: EngPI; ;  
DWPI Class: P31; P32

17/5/11 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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0008312939

WPI ACC NO: 1997-424097/

Related WPI Acc No: 1995-223579; 1996-068111

XRAM Acc No: C1997-135604

XRPX Acc No: N1997-353365

Balloon catheter to repair fractures of tubular bones - has a number of guide wires to pass through the bone channel and fracture site for compression forces on the applied bone cement

Patent Assignee: BERGER J L (BERG-I)

Inventor: BERGER J L

**Patent Family** (1 patents, 1 countries)

Patent Number	Kind	Date	Number	Application	Kind	Date	Update
US 5658310	A	19970819	US 1993130434		A	19931001	199739 B
			US 1993153030		A	19931117	
			US 1995464294		A	19950605	

Priority Applications (no., kind, date): US 1993153030 A 19931117; US 1993130434 A 19931001; US 1995464294 A 19950605

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5658310	A	EN	7	4	C-I-P of application US 1993130434
					C-I-P of application US 1993153030
					C-I-P of patent US 5423850
					C-I-P of patent US 5480400

**Alerting Abstract US A**

The balloon catheter, for an internal fixation of fractures of tubular **bones**, has a number of guide wires for its passage through the medullary canal and fracture site of the **bone**. A **bone cement** is applied to the fracture site, and the balloon is expanded while pressure is applied to the catheter outside the **bone** to apply a compression force across the fracture site for increased stability and promoting **bone** healing.

ADVANTAGE - The appts. minimises damage to the interior blood vessels and periosteum of the **bone**, and allows the guide wires to be removed. It also allows the use of a biodegradable **bone cement**.

**Title Terms/Index Terms/Additional Words:** BALLOON; CATHETER; REPAIR; FRACTURE; TUBE; **BONE**; NUMBER; GUIDE; WIRE; PASS; THROUGH; CHANNEL; SITE; COMPRESS; FORCE; APPLY; **CEMENT**

**Class Codes**

International Classification (Main): **A61M-029/00**

US Classification, Issued: 606192000, 606060000, 604096000

File Segment: CPI; EngPI

DWPI Class: A96; D22; P34

Manual Codes (CPI/A-M): A12-V03B; D09-C01

17/5/13 (Item 13 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0003244207

WPI ACC NO: 1985-001680/198501

XRAM Acc No: C1985-000595

XRXPX Acc No: N1985-001068

Cast models for shaping root of skeletal prosthesis - pref. of silicone rubber in polyethylene film sheath to permit withdrawal from rough cavity

Patent Assignee: STEWAL NV SA (STEW-N)

Inventor: MULIER J C

**Patent Family** (4 patents, 10 countries)

Patent Number	Kind	Date	Number	Application	Kind	Date	Update
EP 129531	A	19841227	EP 1984870080		A	19840615	198501 B
NL 198302178	A	19850116	NL 19832178		A	19830617	198507 E
EP 129531	B	19910502	EP 1984870080		A	19840615	199118 E

DE 3484523

G 19910606

199124 E

Priority Applications (no., kind, date): NL 19832178 A 19830617

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 129531	A	FR	17	10	
Regional Designated States,Original: AT BE CH DE FR GB IT LI LU NL SE					
EP 129531	B	EN		10	
Regional Designated States,Original: AT BE CH DE FR GB IT LI LU NL SE					

**Alerting Abstract EP A**

The shape of the root of a prosthesis for anchorage in the core of part of a human or animal **skeleton** is determined by making a cast (7) of a cavity prepared in the **bone** and using the resulting casting as a guide for machining the body of the root of the prosthesis from a material suitable for long term use. The casting is made from a cold setting material (I) sufficiently elastic to be withdrawn from minor undercut profiles within a medullar cavity without permanent deformation. The withdrawn casting is scanned to detect any high points and the (numerically controlled) cutting machine instructions for making the permanent root are modified to eliminate such high points so that a rigid root can be accepted to a close fit by the cavity, with a thin but sufficient interface of cement to cover the surface and pack the undercut zones to provide a good key.

Pref. (I) if a polysiloxane based rubber. Opt. the cavity is first lined with a loose sheath of elastic flexible material which is not adherent to either the **bone** or the rubber, pref. polyethylene film (4), which can be withdrawn together with and then sepd. from the cast model for the root. A reinforcing rod (9) may be set into the casting before it cures, to support the base for a model of the external part (11) of the prostheses and for remote support of the root during dimensional scanning.

USE - Esp. suitable for anchoring artificial joints, e.g. for hips, knees, elbows, to avoid the use of screwed anchorates which are liable to work loose.

**Title Terms/Index Terms/Additional Words:** CAST; MODEL; SHAPE; ROOT; SKELETON ; PROSTHESIS; PREFER; SILICONE; RUBBER; POLYETHYLENE; FILM; SHEATH; PERMIT; WITHDRAW; ROUGH; CAVITY

**Class Codes**

International Classification (Main): A61F-001/03  
(Additional/Secondary): A61F-002/30

File Segment: CPI; EngPI

DWPI Class: A26; A96; D22; P32

Manual Codes (CPI/A-M): A06-A00E; A12-V02; D09-C01

17/5/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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0002504382

WPI ACC NO: 1982-86249E/198241

Joint prosthesis has hollow prepreg component - inflated to fit inside bone cavity before hardening

Patent Assignee: KRANZ C (KRAN-I); MECRON MEDIZINISCHE PROD GMBH (MECR-N)  
Inventor: KRANZ C

Patent Family (7 patents, 10 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
EP 61993	A	19821006	EP 1982900937	A	19820401	198241 B
WO 1982003323	A	19821014	WO 1982DE78	A	19820401	198242 NCE
DE 3142730	A	19821021	DE 3113531 DE 3142730	A	19810401 19811023	198243 E
EP 74981	A	19830330	EP 1982900937	A	19820401	198314 E
EP 74981	B	19850904	EP 1982900937	A	19820401	198536 E
DE 3265973	G	19851010	DE 3113531 DE 3142730	A	19810401 19811023	198542 E
US 4562598	A	19860107	US 1982448914	A	19821201	198605 NCE

Priority Applications (no., kind, date): US 1982448914 A 19821201; DE 3113531 A 19810401; DE 3142730 A 19811023

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 61993	A	DE	10		
Regional Designated States,Original:					IT
WO 1982003323	A	DE			
National Designated States,Original:					JP US
EP 74981	A	DE			
Regional Designated States,Original:					AT BE CH DE FR GB LI NL SE
EP 74981	B	DE			
Regional Designated States,Original:					AT BE CH DE FR GB IT LI NL SE

#### **Alerting Abstract EP A**

A joint prosthesis comprises an adaptor component, and a prepreg component connected to it; the prepreg component is inserted into the **bone** cavity before it is hardened, and an internal, inflatable bag is pressurised to cause the prepreg component to bear firmly against the inner face of the **bone** before it hardens. The inflating fluid is pref. introduced through a perforated pipe.

The device easily adapts to the individual form of the **bone** of the patient. An ultraviolet light or ultrasonic emitter is pref. introduced through the tube to harden the prepreg component.

#### **Equivalent Alerting Abstract US A**

A joint prosthesis for insertion in an intramedullary cavity comprises an adapter having an entry nipple, a hollow flexible prepreg member of **hardenable material** attached to the adapter, and a hollow, **inflatable** fluid-impervious pressing **bag removable** receivable in the prepreg member. The prepreg member after introduction into the intramedullary cavity is inflated by fluid entering the pressing bag from the adapter nipple which causes the bag to expand. The prepreg member is eventually forced by the bag to conform to the surface of the intramedullary cavity where, upon hardening, the prepreg member forms a hard shell constituting the sole anchoring member of the prosthesis. The prepreg may be a fibre structure wetted, but not yet hardened, with a plastic.

**ADVANTAGE** - The joint is strong and there is less chance of loosening.  
(8pp)

**Title Terms/Index Terms/Additional Words:** JOINT; PROSTHESIS; HOLLOW; PREPREG; COMPONENT; INFLATE; FIT; **BONE**; CAVITY; HARDEN

#### **Class Codes**

International Classification (Main): **A61F-001/03**

(Additional/Secondary): **A61F-002/30 , A61F-005/04**

US Classification, Issued: 606092000, 623018000, 623020000, 623022000

File Segment: CPI; EngPI  
DWPI Class: A96; D22; P32  
Manual Codes (CPI/A-M): A12-S08; A12-V02; D09-C01

17/5/15 (Item 15 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0002327276

WPI ACC NO: 1981-E4434D/198120

Thigh- bone cement tube removal instrument - has hollow extractor  
guiding actuating bar for concentric expander below

Patent Assignee: DIMAKOS C (DIMA-I)

Inventor: DIMAKOS C; RADTKE G

Patent Family (6 patents, 11 countries)

Patent Number	Kind	Date	Number	Kind	Date	Update
DE 2944710	A	19810507	DE 2944710	A	19791106	198120 B
EP 28712	A	19810520	EP 1980106149	A	19801010	198122 E
EP 28712	B	19830518	EP 1980106149	A	19801010	198321 E
DE 3063359	G	19830707	DE 2944710	A	19791106	198328 E
CA 1154646	A	19831004				198344 E
US 4476861	A	19841016	US 1983491972	A	19830505	198444 E

Priority Applications (no., kind, date): DE 2944710 A 19791106

#### Patent Details

Number Kind Lan Pg Dwg Filing Notes

EP 28712 A DE

Regional Designated States,Original: AT BE CH DE FR GB IT LI NL SE

EP 28712 B DE

Regional Designated States,Original: AT BE CH DE FR GB IT LI NL SE

CA 1154646 A EN

#### Alerting Abstract DE A

The instrument removes a bone cement tube from a cavity in a thigh-bone on reimplantation of an artificial thigh- bone neck head, having an extractor for securing to the tube.

The extractor (2) is a hollow tube, inside which an actuating bar (11) for an expander (17) is guided, the expander being below and concentric to the tube. One end (4) of the latter can have an external thread, screwing into a thread tapped in the cement tube, and control surfaces can also be provided at this end for the expander.

#### Equivalent Alerting Abstract US A

The instrument for removal of a hollow bone cement tube from a femur reimplantation has an elongate hollow tube inserted into the bone cement tube. This is then removed with a collet at the insertion end of the hollow tube which is radially expanded to engage the bone cement tube on the interior by rotation of a mandrel having the collet threadedly engaged on the insertion end.

The hollow tube engages the collet to prevent relative rotation with it and to allow the mandrel by threaded engagement with the collect to effect the radial expansion.

ADVANTAGE - The radial forces on the bone may be completely eliminated, particularly when the bone tube is ejected, while at the same time enabling complete removal of the bone cement from the femur. (5pp)

Title Terms/Index Terms/Additional Words: THIGH; BONE ; CEMENT ; TUBE;

REMOVE; INSTRUMENT; HOLLOW; EXTRACT; GUIDE; ACTUATE; BAR; CONCENTRIC;  
EXPAND; BELOW

**Class Codes**

International Classification (Main): **A61B-017/00**  
(Additional/Secondary): **A61B-017/16 , A61B-017/18 , A61F-001/03 ,  
A61M-025/00**

US Classification, Issued: 606100000, 029255000

File Segment: EngPI; ;  
DWPI Class: P31; P32; P34  
?

25/5/5 (Item 5 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0009315002 - Drawing available  
WPI ACC NO: 1999-246157/199921

XRPX Acc No: N1999-183361

**Modular system for hybrid fixation of joint prosthesis**

Patent Assignee: JOHNSON & JOHNSON PROFESSIONAL (JOHJ)

Inventor: BIANCO P T; DEXTRADEUR A J; MANASAS M A

**Patent Family (3 patents, 27 countries)**

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
EP 910999	A2	19990428	EP 1998308566	A	19981020	199921 B
JP 11226037	A	19990824	JP 1998315367	A	19981020	199944 E
US 5976188	A	19991102	US 1997955141	A	19971021	199953 E

Priority Applications (no., kind, date): US 1997955141 A 19971021

**Patent Details**

Number Kind Lan Pg Dwg Filing Notes

EP 910999 A2 EN 8 6

Regional Designated States, Original: AL AT BE CH CY DE DK ES FI FR GB GR  
IE IT LI LT LU LV MC MK NL PT RO SE SI

JP 11226037 A JA 6

**Alerting Abstract EP A2**

NOVELTY - The system includes a sleeve (12), designed to be secured by **bone cement** within a cavity (54) prepared in the end of a **bone**. Its bore is tapered to match the stem of the joint prosthesis to be fitted. A plug (10), tapered to fit the sleeve's bore, slides with it on a guide rod (14) during installation. The rod, plug and pilot shaft (18) are part of a modular alignment system which is **removed** when the **sleeve** is in place.

DESCRIPTION - A pilot shaft of appropriate length is selected and positioned, with the guide rod attached, in the prepared **bone** canal (52) at the required alignment. The seal is positioned to define the base of a cavity which is then filled with **bone cement**. The plug/sleeve assembly is then slid down the guide rod until the sleeve is at the required position in the cavity, the plug preventing **cement** ingress into the sleeve's bore. The rod, plug and shaft are removed when the **cement** is sufficiently hard. Finally, a joint prosthesis is fitted into the tapered bore of the sleeve.

USE - As a system for placing a **cementless** joint prosthesis in a controlled alignment into a sleeve **cemented** into a **bone** cavity.

ADVANTAGE - The system allows the sleeve to be firmly **cemented** within a **bone** cavity without the risk of **cement** fouling its tapered bore. The sleeve's alignment can be accurately established during installation, and its tapered bore provides a **cementless** connection to a matching joint prosthesis which can, if required, subsequently be removed without damaging the **bone**.

DESCRIPTION OF DRAWINGS - The drawing shows a longitudinal section through a femur into which the plug and sleeve have been fitted.

10 Plug

12 Sleeve

16 Seal

14 Guide rod

18 Pilot shaft

52 Bone canal

54 Bone cavity

**Title Terms/Index Terms/Additional Words:** MODULE; SYSTEM; HYBRID; FIX;  
JOINT; PROSTHESIS

**Class Codes**

International Classification (Main): A61F-002/30  
(Additional/Secondary): A61B-017/58 , A61F-002/02 , A61F-002/28 ,  
A61F-002/32 , A61F-002/36 , A61F-002/46

US Classification, Issued: 623018000, 623016000, 623011000, 623022000,  
623023000

File Segment: EngPI; ;  
DWPI Class: P31; P32

25/5/7 (Item 7 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0008374292

WPI ACC NO: 1997-489268/  
XRAM Acc No: C1997-155868  
XRPX Acc No: N1997-407618

**Bioactive glass or ceramic materials - which allow in vitro formation of bone tissue when exposed to tissue culture medium and inoculated with cells**

Patent Assignee: UNIV PENNSYLVANIA (UYPE-N)  
Inventor: BOETTIGER D; DUCHEYNE P; GARCIA A J

**Patent Family** (5 patents, 22 countries)

Patent Number	Kind	Date	Number	Kind	Date	Update
WO 1997035000	A1	19970925	WO 1997US4095	A	19970318	199745 B
AU 199723269	A	19971010	AU 199723269	A	19970318	199806 E
EP 891421	A1	19990120	EP 1997915983	A	19970318	199908 E
			WO 1997US4095	A	19970318	
JP 2000506738	W	20000606	JP 1997533567	A	19970318	200035 E
			WO 1997US4095	A	19970318	
US 6413538	B1	20020702	US 1996617069	A	19960318	200248 E
			US 1999253997	A	19990222	
			US 2000648098	A	20000825	

Priority Applications (no., kind, date): US 2000648098 A 20000825; US 1999253997 A 19990222; US 1996617069 A 19960318

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1997035000	A1	EN	42	5	
National Designated States,Original:					AU CA JP
Regional Designated States,Original:					AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
AU 199723269	A	EN			Based on OPI patent WO 1997035000
EP 891421	A1	EN			PCT Application WO 1997US4095
					Based on OPI patent WO 1997035000
Regional Designated States,Original:					AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 2000506738	W	JA	39		PCT Application WO 1997US4095
US 6413538	B1	EN			Based on OPI patent WO 1997035000
1996617069					Continuation of application US
1999253997					Continuation of application US

**Alerting Abstract WO A1**

Bioactive glass or ceramic material (A), which has been treated prior to contact with anchorage-dependent cells to achieve greater cellular attachment strength, is new.

Also claimed are:

(1) an implant (B) comprising a substrate of bioactive glass or ceramic treated to achieve greater anchorage-dependent cell attachment;

(2) a method for forming tissue made by anchorage-dependent cells in vitro, comprising:

(a) providing a substrate formed of a bioactive material;  
(b) immersing the substrate in a first aqueous solution containing ions in a concentration typical for interstitial fluid;  
(c) immersing the substrate in a second aqueous solution containing  $\geq 1$  cell adhesion molecule (CAM), and

(d) inoculating the substrate with cells in tissue culture medium;

(3) a method for forming tissue made by anchorage-dependent cells in vitro, comprising:

(a) providing a substrate formed of a bioactive material;  
(b) immersing the substrate in a first aqueous solution containing ions in a concentration typical for interstitial fluid;  
(c) immersing the substrate in a second aqueous solution containing a first CAM at a non-saturating concentration;  
(d) immersing the substrate in a third aqueous solution containing a second CAM, and

(e) inoculating the substrate with cells in tissue culture medium;

(4) preparing a substrate for attachment of anchorage-dependent cells, comprising steps (a), (b) and (c) of process (2) above, and

(5) preparing a substrate for attachment of anchorage-dependent cells, comprising steps (a), (b), (c) and (d) as described in (3) above.

USE - The processes are used for synthesis of bioactive ceramic and glass templates for optimum in vitro formation of **bone** and **bone**-like tissue. The products may be used in, e.g. primary joint replacement. Typically, a porous coated prosthesis is surrounded by a **sleeve** of the **porous** template material prepared as outlined above, and seeded with cells.

USE - After one to two weeks, the product is implanted into the patient.

ADVANTAGE - The bioactive glass/ceramic materials permit in vitro formation of **bone** tissue when exposed to a tissue culture medium and inoculated with cells.

**Title Terms/Index Terms/Additional Words:** BIOACTIVE; GLASS; CERAMIC; MATERIAL; ALLOW; VITRO; FORMATION; **BONE**; TISSUE; EXPOSE; CULTURE; MEDIUM; INOCULATE; CELL

**Class Codes**

International Classification (Main): **A61F-002/00**, C12M-003/00, C12N-005/08

(Additional/Secondary): **A61F-002/28**, A61L-027/00, C12M-001/00, C12N-011/14, C12N-005/00, C12N-005/06

US Classification, Issued: 424423000, 424093700, 435176000, 435395000, 435402000

File Segment: CPI; EngPI

DWPI Class: B04; D16; D22; L01; P32; P34

Manual Codes (CPI/A-M): B04-F01; B14-N01; D05-H10; D09-C01D; L01-A01B

25/5/8 (Item 8 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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0007891128 - Drawing available

WPI ACC NO: 1996-069947/199608

XRPX Acc No: N1996-058755

**Femur prosthesis for implanting with cement for trans-prosthetic application - comprises shaft enclosed by extensible sheath of biocompatible polymeric material, sheath being continuously filled from distal to proximal side when cement is applied**

Patent Assignee: MERCK PATENT GMBH (MERE)

Inventor: BERTHOLD N; NIES B

**Patent Family (9 patents, 14 countries)**

Patent Application			
Number	Kind	Date	Number
EP 692228	A1	19960117	EP 1995110275
DE 4424883	A1	19960118	DE 4424883
CZ 199501791	A3	19960117	CZ 19951791
JP 8168502	A	19960702	JP 1995200340
US 5571204	A	19961105	US 1995501923
CN 1120926	A	19960424	CN 1995109962
EP 692228	B1	19991222	EP 1995110275
DE 59507461	G	20000127	DE 59507461 EP 1995110275
ES 2142429	T3	20000416	EP 1995110275
			A 19950701 A 19950701 A 19950701 A 19950701
			199608 B 199608 E 199610 E 199636 E 199650 E 199745 E 200004 E 200012 E 200026 E

Priority Applications (no., kind, date): DE 4424883 A 19940714

#### **Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 692228	A1	DE	7	1	
DE 4424883	A1	DE	6		
JP 8168502	A	JA	6		
US 5571204	A	EN	6		
EP 692228	B1	DE			
DE 59507461	G	DE			Application EP 1995110275 Based on OPI patent EP 692228
ES 2142429	T3	ES			Application EP 1995110275 Based on OPI patent EP 692228

#### **Alerting Abstract EP A1**

The femur prosthesis comprises a shaft (2) which is enclosed by an extensible sheath (4) of biocompatible polymeric material. When cement is applied, the sheath is continuously filled from the distal to the proximal side. When the space (5) between the shaft (2) and bone support (6) is completely filled, the sheath is pressed against the bone support.

The proximal part of the sheath is fixed to spacer pieces (7) serving to centre and align the prosthesis. The sheath has pores which widen when the sheath is filled with cement at the back.

ADVANTAGE - Avoids contamination of the prosthesis surface and the applied cement from blood, secretion and fluid.

**Title Terms/Index Terms/Additional Words:** FEMUR; PROSTHESIS; IMPLANT; CEMENT; APPLY; COMPRISE; SHAFT; ENCLOSE; EXTEND; SHEATH; BIOCOMPATIBLE; POLYMERISE; MATERIAL; CONTINUOUS; FILLED; DISTAL; PROXIMITY; SIDE

#### **Class Codes**

International Classification (Main): A61F-002/36 , A61F-002/46

(Additional/Secondary): A61F-002/30 , A61L-027/00

US Classification, Issued: 623023000

File Segment: EngPI; ;  
DWPI Class: P32; P34

25/5/10 (Item 10 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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0006615056 - Drawing available  
WPI ACC NO: 1993-251265/199332  
XRAM Acc No: C1993-111333  
XRXPX Acc No: N1993-193556

**Prosthesis attachable to bone without fresh bone cement - has preformed resin mantle with roughened outer surface**

Patent Assignee: HOWMEDICA INT (HOWN); HOWMEDICA INT INC (HOWN); HOWMEDICA INT SDE RL (HOWM)

Inventor: GIE G A; LAWES P; LINDER L; LING R S; LING R S M; SLOOFF T J

**Patent Family (7 patents, 17 countries)**

Patent		Application				
Number	Kind	Date	Number	Kind	Date	Update
EP 555004	A1	19930811	EP 1993300590	A	19930127	199332 B
CA 2088632	A	19930804	CA 2088632	A	19930202	199343 E
US 5665121	A	19970909	US 19936882	A	19930121	199742 E
			US 1995377296	A	19950124	
			US 1996610100	A	19960229	
EP 555004	B1	19990217	EP 1993300590	A	19930127	199912 E
DE 69323503	E	19990325	DE 69323503	A	19930127	199918 E
			EP 1993300590	A	19930127	
ES 2127245	T3	19990416	EP 1993300590	A	19930127	199922 E
CA 2088632	C	20040420	CA 2088632	A	19930202	200428 E

Priority Applications (no., kind, date): GB 19922248 A 19920203

**Patent Details**

Number Kind Lan Pg Dwg Filing Notes  
EP 555004 A1 EN 12 18

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

CA 2088632 A EN

US 5665121 A EN 12 18 Continuation of application US  
19936882

Division of application US 1995377296

EP 555004 B1 EN

Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

DE 69323503 E DE Application EP 1993300590  
Based on OPI patent EP 555004

ES 2127245 T3 ES Application EP 1993300590  
Based on OPI patent EP 555004

CA 2088632 C EN

**Alerting Abstract EP A1**

Prosthesis has part (4) insertible into or attachable to **bone** without **bone cement** and which is covered by synthetic resin mantle (7) having roughened outer surface (10) and which is preformed as separate component before fitting to the prosthesis. The mantle is pref. of acrylic **bone cement** and the depth of the roughened surface is 0.5-5 mm.

The mantle outer surface may incorporate natural or synthetic **bone chippings** (13), or may have coating (11) of bioactive hydroxyapatite or

bioglass and have coating of particles of Ca phosphate, partic. hydroxyapatite or tricalcium phosphate, embedded in the surface. Alternatively, the roughened surface may be formed by embedded fragments (24) of Ca sulphate, hydroxyapatite or bone .

USE/ADVANTAGE - Used e.g. for hip or knee prostheses, eliminates the time-consuming procedure of using fresh bone cement with its associated danger of toxicity.

**Title Terms/Index Terms/Additional Words:** PROSTHESIS; ATTACH; **BONE** ; FRESH ; CEMENT ; PREFORM; RESIN; MANTLE; ROUGH; OUTER; SURFACE

**Class Codes**

International Classification (Main): **A61F-002/28 , A61F-002/30**  
(Additional/Secondary): **A61F-002/36 , A61F-005/04 , A61L-027/00**

US Classification, Issued: 623016000, 606092000, 606095000, 623018000,  
623020000, 623023000

File Segment: CPI; EngPI

DWPI Class: A96; D22; P32; P34

Manual Codes (CPI/A-M): A12-V02; D09-C01D

**25/5/12 (Item 12 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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0005727709 - Drawing available

WPI ACC NO: 1991-341878/199147

XRAM Acc No: C1991-147512

XRPX Acc No: N1991-261791

**Intramedullary femoral prosthesis stem - provided with acrylic! perforated sheath to reduce formation of cracks**

Patent Assignee: HOWMEDICA INT INC (HOWN)

Inventor: LAWES P; VANDERLIND J; VANDERLINDEN J

**Patent Family** (11 patents, 19 countries)

Patent	Application	Number	Kind	Date	Number	Kind	Date	Update
EP 457464		A	19911121		EP 1991303958	A	19910501	199147 B
AU 199176454		A	19911121					199203 E
CA 2042642		A	19911118					199207 E
US 5197990		A	19930330	US 1991701556		A	19910516	199315 E
PT 97691		A	19930730	PT 97691		A	19910516	199334 E
AU 642247		B	19931014	AU 199176454		A	19910510	199348 E
EP 457464		B1	19940413	EP 1991303958		A	19910501	199415 E
DE 69101666		E	19940519	DE 69101666		A	19910501	199421 E
				EP 1991303958		A	19910501	
ES 2051082		T3	19940601	EP 1991303958		A	19910501	199425 E
JP 7039558		A	19950210	JP 1991111870		A	19910516	199516 E
IE 64392		B	19950809	IE 19911491		A	19910502	199539 E

Priority Applications (no., kind, date): GB 199011132 A 19900517

**Patent Details**

Number Kind Lan Pg Dwg Filing Notes  
EP 457464 A EN

Regional Designated States,Original: AT BE CH DE ES FR GB GR IT LI LU NL  
SE

CA 2042642 A EN

US 5197990 A EN 4 2

AU 642247 B EN Previously issued patent AU 9176454

EP 457464	B1	EN	6	2	
Regional Designated States,Original:					AT BE CH DE DK ES FR GB GR IT LI LU NL SE
DE 69101666	E	DE	Application EP 1991303958 Based on OPI patent EP 457464		
ES 2051082	T3	ES	Application EP 1991303958 Based on OPI patent EP 457464		
JP 7039558	A	JA	4	2	
IE 64392	B	EN			

**Alerting Abstract EP A**

A perforated sheath of acrylics is designed to cover a stem of an intramedullary prosthesis from its distal end to adjacent the proximal cut end of the femur. Pref. the stem is constructed to allow the prosthesis to move into it under load. Pref. centralisers (14) are provided. Pref. the sheath is made of material similar to **bone cement** e.g. polymethylmethacrylate.

ADVANTAGE - Reduces the chance of cracks or gaps forming between the prosthesis, **bone** and **cement**. @ (6pp Dwg.No.1/2)@

**Equivalent Alerting Abstract US A**

Prosthetic intramedullary femoral prosthesis comprises a stem and a separate preformed **sheath** made from an acrylic material dimensioned to enclose the stem from its distal tip to an adjacent location on the stem to the proximal cut end of the femur being used.

Sheath has same shape as the stem, but extends further in the distal direction to form a void between the distal tip and that of the stem. Sheath slidably receives the stem to allow axial movement between them over the length of the stem after implantation. Sheath has thickness of 0.5-2mm.

ADVANTAGE - Interface conditions between the **cement** in an intramedullary canal and the surface of the stem are optimised.

**Title Terms/Index Terms/Additional Words:** INTRAMEDULLARY; FEMORAL; PROSTHESIS; STEM; POLYACRYLIC; PERFORATION; SHEATH; REDUCE; FORMATION; CRACK

**Class Codes**

International Classification (Main): A61F-002/30 , A61F-002/32 ,  
A61F-002/36

US Classification, Issued: 623023000, 623016000, 623018000

File Segment: CPI; EngPI

DWPI Class: A96; D22; P32

Manual Codes (CPI/A-M): A04-F01A; A12-V02; D09-C01

25/5/15 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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0001129167

WPI ACC NO: 1976-B3151X/197606

Therapeutic musculoskeletal support sleeve - has removable portion of support sleeve material to give selective relief

Patent Assignee: HOLLINGSHEAD D W (HOLL-I)

Inventor: HOLLINGSHEAD D W; PHILLIPS C E

Patent Family (4 patents, 4 countries)

Patent Number	Kind	Date	Number	Application Kind	Date	Update
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US 3934583	A	19760127	US 1974509821	A	19740927	197606	B
SE 197510776	A	19760426				197620	E
GB 1515153	A	19780621				197825	E
CA 1035224	A	19780725				197832	E

Priority Applications (no., kind, date): US 1974509821 A 19740927

**Patent Details**

Number	Kind	Lan	Pg	Dwg	Filing Notes
SE 197510776	A	SV			
CA 1035224	A	EN			

**Alerting Abstract US A**

The flexible therapeutic anatomical support is of form-fitting, compressive, heat-retaining elastic foam material the supportive, compressive and movement resisting forces of which are selectively reinforced and relieved, for supporting, protecting and resisting the movement of the muscles and **skeletal** structure at joints and other limb area during presurgery conditioning post-trauma, and post-surgery convalescence. A limb-ensheathing sleeve of sufficient length to cover the affected portion of the limb is fabricated from a sheet of foam neoprene material bent around to form a tube and adhesively secured at its seam edges with contact cement.

**Title Terms/Index Terms/Additional Words:** THERAPEUTIC; SUPPORT; SLEEVE;  
REMOVE; PORTION; MATERIAL; SELECT; RELIEF

**Class Codes**

(Additional/Secondary): **A61F-013/00**  
US Classification, Issued: 602062000, 602065000

File Segment: EngPI; ;  
DWPI Class: P32  
?

Set	Items	Description
S1	3304325	BONE OR BONES OR BONEY OR BONED OR OSSEOUS? OR OSTEAL? OR - SKELETON? OR SKELETAL? OR (INTRAMEDUL? OR INTERMEDUL? OR HARD OR BONY OR BONEY OR HUMERUS OR HUMERAL OR FEMUR OR FEMORAL) (- 3N) (TISSUE OR TISSUES)
S2	437233	CEMENT? OR PASTE OR PASTES OR CPC OR HARDEN? (3N) (MATERIAL? OR SUBSTANCE?)
S3	11243778	INJECT? OR ADMINIST? OR DELIVER? OR INTRODUC? OR DISPENS? - OR DISCHARG?
S4	4147725	REMOV? OR (TAKE OR TOOK OR CUT OR CUTS OR PULL? ? OR PULLED OR PULLING) () OUT OR EXTRACT?
S5	5609114	SEPARAT? OR DETACH? OR RELEAS?
S6	818799	POCKET? OR POUCH? OR BALLOON? OR SAC OR SACS OR SACK OR SA- CKS OR BAG OR BAGS OR BAGLIKE OR ENCLOSURE? OR SLEEVE? OR SHE- ATH?
S7	685497	INFLAT? OR EXPAND?
S8	2688509	MESH??? OR PORE? ? OR POROUS? OR FABRIC OR CLOTH
S9	9289	S2 (5N) S3
S10	29324	S4:S5 (5N) S6:S7
S11	9519	S6:S7 (5N) S8
S12	0	S1 AND S9 AND S10 AND S11
S13	18	S1 AND S9 AND S10
S14	8	RD (unique items)
S15	52	S1 AND S2 AND S10
S16	26	S15/2004:2006
S17	24	S15 NOT (S8 OR S16)
S18	19	RD (unique items)
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File	155: MEDLINE(R) 1950-2006/Sep 04	
	(c) format only 2006 Dialog	
File	73: EMBASE 1974-2006/Sep 05	
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File	5: Biosis Previews(R) 1969-2006/Aug W4	
	(c) 2006 The Thomson Corporation	
File	6: NTIS 1964-2006/Aug W4	
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File	34: SciSearch(R) Cited Ref Sci 1990-2006/Aug W4	
	(c) 2006 The Thomson Corp	
File	434: SciSearch(R) Cited Ref Sci 1974-1989/Dec	
	(c) 2006 The Thomson Corp	
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18/5/2 (Item 2 from file: 155)

DIALOG(R) File 155: MEDLINE(R)

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14025318 PMID: 12450047

**Endoscopic endonasal treatment of a spontaneous temporosphenoidal encephalocele with a detachable silicone balloon . Case report.**

Alfieri Alessandra; Schettino Raffaele; Taborelli Angelo; Pontiggia Maurizio; Reganati Paolo; Ballarini Valerio; Monolo Luigi

Department of Neurosurgery, "A. Manzoni" Hospital, Lecco, Italy.  
alessandralfieri@yahoo.it

Journal of neurosurgery (United States) Nov 2002, 97 (5) p1212-6,  
ISSN 0022-3085--Print Journal Code: 0253357

Publishing Model Print

Document type: Case Reports; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: AIM; INDEX MEDICUS

Temporosphenoidal encephaloceles are rare entities that occur when the temporal lobe herniates into the sphenoid sinus through a skull base defect of the temporal **bone**. Both an iatrogenic and a traumatic pathogenesis have been proposed. The authors describe a spontaneously occurring temporosphenoidal encephalocele in a 63-year-old woman who had a 4-year history of rhinorrhea. Spiral computerized tomography (CT) scanning revealed a **bone** defect located inside the ophthalmomaxillary triangle. The intrasphenoidal encephalocele had a heterogeneously hypointense signal compared with cerebrospinal fluid (CSF) on T1-weighted magnetic resonance (MR) images and a hyperintense signal compared with CSF on T2-weighted MR images. Two previous endonasal endoscopic procedures, performed by ear, nose, and throat surgeons, had been unsuccessful. The authors performed an endoscopic endonasal right nostril procedure by using 0 degrees and 45 degrees rigid-lens endoscopes that were 4 mm in diameter and 18 cm long. The encephalocele in the sphenoid sinus was partially removed. DuraGen and fat graft were positioned in the **bone** defect. Two No. 2 French **detachable** silicone **balloons** (1.5 cm<sup>3</sup> volume) inflated with surgical glue were introduced into the skull defect and into the sphenoid sinus, respectively. The CSF leakage stopped immediately. No nasal packing or postoperative CSF lumbar drainage was necessary. The patient did well. Postoperative CT and MR imaging, obtained at 24 hours and at 3 months, demonstrated that the balloon and the fat graft filled the **bone** defect and the sphenoid sinus. Eight months postprocedure no CSF leakage was observed. This appears to be the first case reported in the literature of a temporosphenoidal encephalocele successfully treated by an endoscopic endonasal technique involving packing of the defect with **inflated** **detachable** **balloons**.

Tags: Female

Descriptors: \*Balloon Dilatation; \*Encephalocele--therapy--TH; Balloon Dilatation--instrumentation--IS; **Bone Cements** --therapeutic use--TU; Cerebrospinal Fluid Rhinorrhea--therapy--TH; Encephalocele--diagnosis--DI; Endoscopy; Equipment Design; Humans; Magnetic Resonance Imaging; Middle Aged; Nasal Cavity; Silicones; Sphenoid Sinus; Temporal Lobe--pathology--PA ; Tomography, X-Ray Computed; Treatment Outcome

CAS Registry No.: 0 (Bone Cements); 0 (Silicones)

Record Date Created: 20021126

Record Date Completed: 20021213

18/5/9 (Item 1 from file: 73)

DIALOG(R) File 73: EMBASE

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13196431 EMBASE No: 2005263142

Minimally invasive reduction and internal stabilization of osteoporotic vertebral body fractures (Balloon Kyphoplasty)

MINIMAL INVASIVE REPOSITION UND INNERE STABILISIERUNG OSTEOPOROTISCHER WIRBELKORPER FRAKTUREN (BALLONIKYPHOPLASTIE)

Hillmeier J.; Meeder P.J.; Noldge G.; Kasperk C.

Dr. J. Hillmeier, Abteilung fur Unfall- und Orthopadische Chirurgie, St.-Vincenz-Krankenhaus Limburg, Lehrkrankenhaus der Universitat Giessen, Auf dem Schafberg, D-65549 Limburg Germany

AUTHOR EMAIL: j.hillmeier@st-vincenz.de

Operative Orthopadie und Traumatologie ( OPER. ORTHOP. TRAUMATOL. ) (Germany) 2003, 15/4 (343-362)

CODEN: OOTPA ISSN: 0934-6694

DOCUMENT TYPE: Journal ; Article

LANGUAGE: GERMAN; ENGLISH SUMMARY LANGUAGE: GERMAN; ENGLISH

NUMBER OF REFERENCES: 19

Objective: Restoration of height of a fractured vertebral body with an inflatable balloon system introduced transpedicularly into the vertebral body. The system creates a cavity that is filled with **bone cement**. This minimally invasive procedure creates an internal stabilization.

Indications: Osteoporotic vertebral compression fractures with an intact posterior wall. Osteolytic metastases. Primary benign vertebral tumors such as hemangioma. Traumatic compression fractures with an intact posterior wall. Contraindications: Unstable burst fractures involving the posterior wall. Coagulopathies. Disk herniation accompanied by radiculopathy.

Compression of entire vertebral body (vertebra plana). Surgical Technique: In prone position and under fluoroscopic control transpedicular placement of Yamshidi needles into the posterior third of the vertebral body through stab incisions. Insertion of guide wires through these needles for proper placement of working cannulae. Drilling of a channel for insertion of the balloon system. Under fluoroscopy in two planes, pressure-controlled filling of the balloon with a contrast medium. Once the proper vertebral height has been obtained, removal of contrast medium and **balloon** and filling of the cavity with **cement** avoiding any leakage into the spinal canal. Once the **cement** has hardened, removal of working cannulae, skin closure. Results: In a prospective study of 95 patients (165 vertebral bodies) with osteoporotic fractures treated with PMMA **cement** or calcium phosphate filling, we observed a marked symptom reduction in 89%. The average restoration of height amounted to 16%. **Cement** leakage not leading to any complications occurred in 14 vertebral bodies (8%), a percentage far below published values of 20-70%. (c) Urban & Vogel Munchen 2003.

DEVICE BRAND NAME/MANUFACTURER NAME: Yamshidi

DRUG DESCRIPTORS:

contrast medium; gentamicin **bone cement**; calcium phosphate

MEDICAL DESCRIPTORS:

\*fragility fracture--surgery--su; \*vertebra fracture--surgery--su; \*kyphoplasty

minimally invasive surgery; vertebra body; spine stabilization; treatment indication; treatment contraindication; surgical technique; surgical approach; guide wire; fluoroscopy; vertebral canal; prospective study; treatment outcome; body height; human; major clinical study; clinical trial; article; priority journal

CAS REGISTRY NO.: 10103-46-5, 13767-12-9, 14358-97-5, 7758-87-4 (calcium phosphate)

SECTION HEADINGS:

027 Biophysics, Bioengineering and Medical Instrumentation

033 Orthopedic Surgery

18/5/11 (Item 3 from file: 73)  
DIALOG(R) File 73:EMBASE  
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06473621 EMBASE No: 1996122023

A new device for cement mantle extraction: The cement extraction segmental system SEG-CES

UN PROCEDE ORIGINAL D'EXTRACTION DES GAINES CIMENTEES DIAPHYSAIRES. LE SEGMENTAL CIMENT EXTRACTION SYSTEM OU SEG-CES

Cordonnier D.; Desrousseaux J.F.; Polveche G.; Rattier B.; D'Almeida M.; Vinchon B.

Service d'Orthopedie-Traumatologie, C.H. Saint-Philibert, 115, Rue du Grand But, F 59160 Lomme France

Revue de Chirurgie Orthopedique et Reparatrice de l'Appareil Moteur (REV. CHIR. ORTHOP. REPAR. APPAR. MOT.) (France) 1996, 82/2 (166-170)

CODEN: RCORA ISSN: 0035-1040

DOCUMENT TYPE: Journal; Article

LANGUAGE: FRENCH SUMMARY LANGUAGE: ENGLISH; FRENCH

Purpose of the study: We report our first eleven uses of a new **cement** mantle extraction system. The basis of this technique relies on a **cement** **bone** interface with a lower strength compared to the old **cement** - new **cement** interface. Material and methods: The first stage of the procedure consists in a specific preparation of the inner surface of the old **cement** mantle. It should be clean and dry after being abraded with a stainless steel wire brush. Then a thin **cement** syringe filled with low Viscosity PMMA **cement**, is injected in the old mantle in a retrograde fashion. A threaded rod with nuts is centered within the **cement** sheath to the bottom and held until the injected **cement** has fully polymerised. Then the threaded rod is unscrewed from the femur; nuts are established along the entire length of the **cement** column. To prevent trochanteric fracture occurring upon **cement** extraction, it is important to clear away sufficient **bone** from the lateral aspect of the canal. A series of extraction rods are then used to sequentially remove the **cement** mantle. The removal rod is screwed back into the threaded channel at a distance of every one to three nuts, and then attached to the slap hammer via a quick release connection. **Cement** extraction is performed using deliberate slaps of the slap hammer. The last segment is drilled with the use of a distal plug drill centering **sleeve**. After having inserted the plug **removal** rod, the last segment is extracted. We used this technique eleven times in 8 hips for 5 loosening of femoral component and 3 revisions hip arthroplasties without loosening and 2 revisions knee arthroplasties without loosening (an extraction system for the femur and the tibia).

Results: For the 5 loosening cases extraction was easy. In 2 cases, **cement** mantle was removed as a single 'en bloc' piece. In the 3 other cases, the extraction was segmental only in the distal third of the **cement** mantle. Without loosening, the extraction was completely segmental. In all cases, **cement** mantles were successfully removed. There was no fracture and no loss of **bone** stock. There was only one 'fissuration' of the great trochanter and we only made one distal window. All hip arthroplasties were replaced and arthrodesis were performed after removal of the knee arthroplasties. Discussion: The **cement** -assisted mantle removal technique appears to be a simple, quick and effective methods for **cement** mantle removal. Perforation and diaphyseal window can be avoided by the technique even when loosening does not exist. However, it is necessary to establish a thorough preoperating plan in order to eliminate contraindications such as too narrow or too curved sheath. Conclusion: It appears that this new procedure will facilitate future reoperations which are reputed to be

difficult and dangerous.

DRUG DESCRIPTORS:

**bone cement**

MEDICAL DESCRIPTORS:

\*femur; \*total hip prosthesis  
article; extraction; methodology; reoperation

SECTION HEADINGS:

033 Orthopedic Surgery

?

Set	Items	Description
S1	363634	BONE OR BONES OR BONEY OR BONED OR OSSEOUS? OR OSTEAR? OR - SKELETON? OR SKELETAL? OR (INTRAMEDUL? OR INTERMEDUL? OR HARD OR BONY OR BONEY OR HUMERUS OR HUMERAL OR FEMUR OR FEMORAL) (- 3N) (TISSUE OR TISSUES)
S2	272602	CEMENT? OR PASTE OR PASTES OR CPC OR HARDEN? (3N) (MATERIAL? OR SUBSTANCE?)
S3	12280831	INJECT? OR ADMINIST? OR DELIVER? OR INTRODUC? OR DISPENS? - OR DISCHARG?
S4	2347444	REMOV? OR (TAKE OR TOOK OR CUT OR CUTS OR PULL? ? OR PULLED OR PULLING) () OUT OR EXTRACT?
S5	7429027	SEPARAT? OR DETACH? OR RELEAS?
S6	1167312	POCKET? OR POUCH? OR BALLOON? OR SAC OR SACS OR SACK OR SA- CKS OR BAG OR BAGS OR BAGLIKE OR ENCLOSURE? OR SLEEVE? OR SHE- ATH?
S7	4468507	INFLAT? OR EXPAND?
S8	495374	MESH??? OR PORE? ? OR POROUS? OR FABRIC OR CLOTH
S9	5198	S2 (5N) S3
S10	52223	S4:S5 (5N) S6:S7
S11	11768	S6:S7 (5N) S8
S12	0	S1(S) S9(S) S10(S) S11
S13	2	S1(S) S9(S) S10
S14	14	S1(S) S2(S) S10
S15	5	S14/2004:2006
S16	7	S14 NOT (S13 OR S15)
S17	6	RD (unique items)
? show files		
File 16:Gale Group PROMT(R) 1990-2006/Sep 01 (c) 2006 The Gale Group		
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